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REENGINEERING THROUGH INFORMATION TECHNOLOGY



Accompanying Report of the
National Performance Review
Office of the Vice President
Washington, DC

September 1993

DRAFT

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IMPLEMENTATION CATEGORIES

Each action is followed by a number in parenthesis that indicates the necessary avenue for effective implementation. Appendix A organizes all actions according to these categories.

- (1) Agency heads can do themselves
- (2) President, Executive Office of the President, or Office of Management and Budget can do
- (3) Requires legislative action
- (4) Good idea, but will require additional work, or may be better suited for future action

ABBREVIATIONS

ACS	Automated Commercial System
AFDC	Aid to Families With Dependent Children
Arpanet	Advanced Research Projects Agency Network
ATM	Automated Teller Machine
BBS	Bulletin Board System
CD-ROM	Compact Disk-Read Only Memory
CSIT	Customer Service Improvement Team
DOD	Department of Defense
DOE	Department of Energy
DSS	Digital Signature Standard
EBT	Electronic Benefit Transfer
EDI	Electronic Data Interchange
EDP	Executive Development Program
EFT	Electronic Funds Transfer
EPA	Environmental Protection Agency
FACET	Future Automated Commercial Environment Team
FAR	Federal Acquisition Regulations
FCC	Federal Communications Commission
FCCSET	Federal Coordinating Council on Science, Engineering, and Technology
FEMA	Federal Emergency Management Agency
FIC	Federal Information Center
FIRMPoC	Federal Information Resources Management Policy Council
FMS	Financial Management Service
FNC	Federal Networking Council
FNS	Food and Nutrition Service
FOIA	Freedom of Information Act
FRA	Federal Records Act
GAO	General Accounting Office
GII	Government Information Infrastructure
GITS	Government Information Technology Services
GSA	General Services Administration
HHS	Department of Health and Human Services
HUD	Department of Housing and Urban Development
IBIS	Interagency Border Inspection System
ICN	Iowa Communications Network
IITF	Information Infrastructure Task Force

INS	Immigration and Naturalization Service
IRM	Information Resources Management
IRS	Internal Revenue Service
ISOO	Information Security Oversight Office
IT	Information Technology
MOU	Memorandum of Understanding
NARA	National Archives and Records Administration
NASA	National Aeronautics and Space Administration
NII	National Information Infrastructure
NISP	National Industrial Security Program
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NSA	National Security Agency
NSF	National Science Foundation
NSTAC	National Security Telecommunications Advisory Committee
NTIA	National Telecommunications and Information Administration
NTIS	National Technical Information Service
OIRA	Office of Information and Regulatory Affairs
OMB	Office of Management and Budget
ONDCP	Office of National Drug Control Policy
OPM	Office of Personnel Management
OSTP	Office of Science and Technology Policy
PC	Personal Computer
PDD	Presidential Decision Directive
PIN	Personal Identification Number
POS	Point of Sale
PRD	Presidential Review Directive
PSN	Public Switched Network
R&D	Research and Development
SES	Senior Executive Service
SSA	Social Security Administration
SSI	Supplemental Security Income
TCP/IP	Transmission Control Protocol/Internet Protocol
USC	United States Code
USDA	United States Department of Agriculture
USPS	United States Postal Service
VA	Department of Veterans Affairs
WCF	Working Capital Fund
WIC	Women, Infants, and Children

EXECUTIVE SUMMARY



When it comes to information technology, horror stories abound in both the public and private sectors. In some cases, the federal government is woefully behind the times, unable to use even the most basic technology to conduct its business. At one point, for instance, three Agriculture Department bureaus were supposed to share a computer system to improve the management of food and subsidy programs. Five years later, they still could not resolve differences over testing, installation, and maintenance.

In society at large, the widespread use of new technology has caused problems that include threats to personal privacy and safety. In Brooklyn not long ago, crooks used a hidden video camera to watch people withdrawing money at ATM machines. By recording personal identification numbers, the cameras helped the crooks later make unauthorized withdrawals.

Nevertheless, information technology has brought the convenience of revolutionary change to everyday life, from ATM machines at banks to global transfers of funds, from 800 telephone services to personal home computers, "e-mail," and the worldwide Internet computer telecommunications system. Whatever its problems, the information technology revolution is upon us. One author calls such technology the

most powerful tool for change in the modern era.¹ American businesses, particularly the smarter ones, are taking notice.

"Computers and telecommunications are reshaping the basic structure of American enterprise, and any competitive business must realize the new technology either to improve its products and services or to create entirely new ones."²

The private sector is employing information technology to reengineer the way it does business, using human and material resources more efficiently and competing more effectively.

Lagging Behind. For various reasons—some regulatory, some legislative, some cultural—the federal government lacks appropriate access to the most efficient, cost effective information technology products and services. The government has lacked not only strong leadership in this area, but also a coherent plan on how to most effectively tap information technology's potential. This report provides Washington with a road map to the future.

The government must not apply information technology haphazardly or sporadically. It also should not simply automate existing practices. Instead, public officials should view information technology as the essential infrastructure for government of the 21st Century, a modernized "electronic govern-

ment” to give citizens broader, more timely access to information and services through efficient, customer-responsive processes.

For practically everyone, dealing with the government is complicated. Americans complain that government is too slow or confusing in delivering its services or that they have too many places to call or go. Government employees complain even more about trying to deal with other parts of government. A big reason is the incredible volume of information that government processes and files.

Information technology, with its ability to electronically store and rapidly sort, transmit, and access information, is the key to solving this problem. If MasterCard can resolve a credit card issue at 1 a.m. and Federal Express can find the location of a package anywhere in the world, then, theoretically at least, government can do as well. But while technology solutions exist, government is falling dangerously behind the private sector in using technology to deliver services.

Catching Up. President Clinton and Vice President Gore want to use information technology to improve Americans’ quality of life and reinvigorate the economy. The administration has identified technology as the “engine of economic growth.”³ Among its top priorities is accelerating the development of a National Information Infrastructure of high-speed telecommunication networks, advanced computer systems, and software.

Today, information technology can create the government of the future, the *electronic government*. Electronic government overcomes the barriers of time and distance to perform the business of government and give people public information and services when and where they want it. It can swiftly transfer funds, answer questions, collect and validate data, and keep information flowing smoothly within and outside government. But making electronic government a reality requires two things: (1) leadership to place information technology at the center of the business of governing and (2) *commitment* to the necessary support mechanisms.

This report outlines a three-part agenda for spreading information technology’s benefits to the federal government: (1) Strengthen Leadership in Information Technology, (2) Implement “Electronic Government,” and (3) Establish Support Mechanisms for Electronic Government.

Strengthen Leadership in Information Technology. The recently created Information Infrastructure Task Force (IITF) can provide leadership in integrating information technology into systems that support government’s operation.⁴ Chaired by the Secretary of Commerce, this task force is responsible for articulating and implementing the President’s vision for advanced telecommunications and computing technology. It is uniquely positioned to help develop the governmental aspects of America’s information infrastructure. The President should expand the task force’s work to include a Government Information Technology Services (GITS) Working Group which, in turn, would collaborate with state and local governments as well as the private sector.

The GITS Working Group should work with the IITF to develop a strategic vision and an implementation plan for using government information resources across and within agencies, and develop steps to improve how government provides information and services to the public. In addition, the working group should develop strategies to empower information technology management in federal agencies and set priorities for sharing information among agencies.

Creating an Electronic Government.

Electronic government extends the idea first seen in electronic banking. Just as ATMs, plastic access cards, and nationwide networks have made banking more convenient, electronic government will make communicating with government easier and faster. Obviously, as in electronic banking, privacy and security issues must be addressed here as well.

We propose seven initiatives to inaugurate the electronic government. They provide dynamic opportunities to improve the efficiency and easy use of government services. Their implementation will provide substantial return on investment through increases in productivity.

Integrated Electronic Benefit Transfer.

Electronic benefit transfer will use information technology present in the financial industry to deliver, nationwide, fast and efficient government assistance—including Food Stamps, Social Security benefits, and veterans' benefits.

Integrated Electronic Access to Government Information and Services.

Access to government is a right of Americans. Existing technology makes possible the integrated electronic access to government information and services. The use of a single nationwide 800 telephone number would simplify access to government agencies. Electronic government kiosks that use technology similar to that in ATMs can provide "one-stop shopping" for both government information and services. Personal computers may also be used to access electronic bulletin board systems, databases, and agency directory services.

National Law Enforcement/Public Safety Network. A National Law Enforcement/Public Safety Wireless Network will improve coordination and communication among federal, state, and local law enforcement and public safety agencies, and will save money. It must first focus on establishing standards for sharing information and implementing appropriate privacy and security measures.

Intergovernmental Tax Filing, Reporting, and Payments Processing. The IRS already has on file all the tax information needed to calculate the taxes due for about 60 million taxpayers because financial institutions and employers are required to report this information. Yet IRS and state

tax agencies still require taxpayers to compute what IRS already knows. If IRS computed taxes and sent a statement, and if electronic filing were used for all others, IRS and state agencies could forgo the mailing of 75 boxcars of forms to taxpayers—and certain classes of taxpayers could ultimately not need to file. For others, they will need to only file once. Enormous administrative savings would accrue to government and the burden on taxpayers would be reduced.

International Trade Data System. To help ensure the nation's competitiveness in global markets, the Treasury Department should create an all-inclusive database for disseminating international trade data, for use by the government and the trade community.

National Environmental Data Index. The National Oceanic and Atmospheric Administration should create a National Environmental Data Index to coordinate the development and use of environmental data gathered by various government agencies. Its goal—to give government, the private sector, academia, and citizens easy access to environmental information.

Governmentwide Electronic Mail. In the private sector, e-mail and messaging systems are becoming as common as the desktop computer. Governmentwide electronic mail is a natural progression from paper-based government to an electronic government. E-mail allows rapid communication among employees across agency boundaries. The administration should work with Congress to resolve issues regarding what constitutes a government record created by e-mail, and how to ensure appropriate security in using e-mail.

Establish Support Mechanisms for Electronic Government. The administration is working with the private sector to more quickly develop a broad, privately-operated national information infrastructure (NII). The NII "will revolutionize the way

we work, learn, shop, and live, and will provide Americans the information they need, when they need it, and where they need it—whether in the form of text, images, sound, or video.”⁵ This capability will “enhance the productivity of work and lead to dramatic improvements in social services, education, and entertainment.”⁶ Nevertheless, this bright future can only become a reality if we adopt “forward-looking policies that promote the development of new technologies and if we invest in the information infrastructure for the 21st Century.”⁷

The public and private sectors both must help improve the nation’s information infrastructure. Federal officials have a special responsibility since the government produces information resources, uses and makes policy for the use, acts as a catalyst for their development, and delivers services through them.⁸ The government should extensively use the emerging national information infrastructure that American industry is creating and refining. In a recent report, the President of the National Academy of Public Administration writes,

*Information is pivotal to the vitality and productivity of government services and the nation’s economic competitiveness. At issue is whether we can use information technology effectively to empower government, the private sector, and citizens alike. The complexity of today’s world demands that the public and private sectors not only learn to master this tool, but also work cooperatively to maximize the national benefits.*⁹

The infrastructure will allow the government to consolidate and modernize its data processing centers and standardize some of government’s basic administrative functions, such as payroll, personnel record-keeping, management information systems, and financial and general ledger accounting. The GITS Working Group should develop an implementation plan for consolidating data processing installations and reengineering common application systems.

The administration recognizes that initiatives to bring electronic government to the

public require strategic relationships between government and the private sector. These relationships must include necessary incentives for innovation. Agencies should be able to retain a portion of savings produced through information technology for reinvestment, and use multi-year funding for information technology projects. The government should promote performance-based contracting for information technology products, allowing the private sector to increase its profits if it can find ways to make government run more efficiently and cost effectively. It should create a governmentwide venture capital fund to finance innovative information technology projects within agencies.

Success in implementing electronic government also depends on public confidence. Electronic government must protect the information it processes and ensure individual privacy. It also must protect national security interests, permit legitimate law enforcement activities, enhance global competitiveness and productivity for American business and industry, and ensure civil liberties. The government must define uniform privacy protection practices and generally accepted principles for information security. It also must adopt a digital signature standard, and it must promulgate encryption standards for sensitive information.

The government also must expedite and simplify how it acquires information technology. The market for computer hardware and software involves products for which the shelf life can be as short as a few months. In this environment, the government needs aggressive, innovative purchasing methods. The General Services Administration’s (GSA’s) current schedules should be replaced with a real-time, on-line electronic marketplace. Dollar limits on agency delegations of procurement authority and on credit card purchases for commercial information technology commercial items should be raised significantly.

Federal employees must get training and technical assistance in information technology. The government should create a

program to train nontechnical senior executives and political appointees. Moreover, the Office of Personnel Management and GSA should establish information resources management (IRM) competencies for federal employees pursuing appointments to IRM management positions.

Finally, because the new technology allows a physical restructuring of the organization making it less hierarchical, employees at all levels should be able to interact electronically, sharing ideas and helping one another with on-line resolution of information technology problems.¹⁰

The quicker the federal workforce embraces the possibilities of information technology, the sooner the initiatives of electronic government can become a reality benefiting the public. By reengineering through information technology, the Clinton administration will provide the leadership, vision, and commitment to bring government into the Information Age.

Endnotes

1. Davenport, Thomas H., *Process Innovation: Re-engineering Work through Information Technology* (Boston: Ernst & Young, 1993), p. 1.
2. Davis, Stan, and Bill Davidson, *2020 Vision* (New York: Simon and Schuster, 1991), front cover.
3. President William J. Clinton and Vice President Albert Gore, Jr., *Technology for America's Growth, A New Direction to Build Economic Strength*, (Washington, D.C.: U.S. Government Printing Office (GPO), 1993), p. 7.
4. The Information Infrastructure Task Force was formed by the National Economic Council and the Office of Science and Technology Policy in May 1993. It is a federal government interagency task force consisting of representatives from federal agencies involved in telecommunications and information policy. The task force addresses issues that promote the application of the National Information Infrastructure.
5. Federal Coordinating Council for Science, Engineering, and Technology, "High Performance Computing and Communications: Toward a National Information Structure," (Washington, D.C.: OSTP, 1993).
6. Council for Competitiveness, "Vision for a 21st Century Information Infrastructure," Washington, D.C., May 1993.
7. See President William J. Clinton and Vice President Albert Gore, Jr.
8. U.S. Office of Management and Budget, *Information Resources Management Plan of the Federal Government* (Washington, D.C.: GPO, 1992), p. III-8.
9. National Academy of Public Administration, *The Information Government, National Agenda for Improving Government through Information Technology* (Washington, D.C., 1993), p. iii.
10. Morgan, Gareth, *Riding the Waves of Change* (San Francisco: Jossey-Bass, 1990), p. 102.

STRENGTHEN LEADERSHIP IN INFORMATION TECHNOLOGY





IT01: PROVIDE CLEAR, STRONG LEADERSHIP TO INTEGRATE INFORMATION TECHNOLOGY INTO THE BUSINESS OF GOVERNMENT

MAKING THE VISION A REALITY

An agency submits its Information Systems Plan to the Office of Management and Budget. The plan clearly supports the agency mission plan and the national strategic vision for using information technology.

BACKGROUND

Reinventing government is an enormous, complex undertaking that begins with leadership, not technology. Yet information technology (IT)—because it can help break down bureau and agency boundaries—can be a powerful tool for reinvention. Its use requires both a clear vision of how government can benefit from technology to change the way it does business, and a commitment to making the vision a reality. Only good leadership, which combines vision and commitment, can ensure sound investments in IT to support the redesign of federal business practices.

The Clinton administration has made expanded use of IT a national goal; its efforts in achieving this goal are two-pronged.

- **Creating a National Vision.** To accelerate the development of the National Information Infrastructure, the National Economic Council and the Office of Science and Technology Policy have created a committee—the Information Infrastructure Task Force—to coordinate the administration's efforts to formulate forward-looking telecommunications and information policies. This task force, chaired by the Secretary of Commerce and comprised of deputy-level representatives of relevant federal departments, will articulate and implement the President's vision of a nationwide system in which all Americans can exchange and receive information when and where they need it at a reasonable cost.
- **Improving Federal IT Practices.** The Paperwork Reduction Act of 1980

gives the Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA) governmentwide responsibility for providing leadership in information management. The act also charges a senior official within each agency—reporting directly to the agency head—to provide agency-level leadership in this area. With proper vision and direction, these officials could fulfill their potential as agents of change, using information technology to help reinvent their agencies' approach to their mission.

NEED FOR CHANGE

The federal government's attempt to integrate information technology into the systems supporting its operations have produced some successes—and some costly failures. Despite spending an estimated \$25 billion in fiscal year 1993 on information technology, the federal government has lacked the strong and effective leadership required to assure that government makes the most of these resources.¹ We have operated without any overall, enterprisewide strategic plan or vision of the role of information systems in government, and with little or no regard for connections among various federal agencies, or with state and local governments. Many agency heads and federal executives continue to overlook IT's strategic role in reengineering business practices. Agency information resource managers typically lack the tools or the opportunity to be effective partners with top executives in developing strategies to use technology effectively. Too often, agency information resource management (IRM) plans and agency strategic plans are not integrated. Without clear direction and support from the top, modernization programs tend to degenerate into loose collections of independent systems solving unique problems and automating—rather than improving upon—the existing ways of doing business. For example, three bureaus in the

Department of Agriculture were to share a computer system to improve the management of food acquisition and price support programs. However, 5 years after work on the system had begun, no mechanism had been established to resolve disagreements that arose in testing, installation, and maintenance.²

The oversight community—OMB, the General Services Administration (GSA), congressional committees, the Inspectors General, and the General Accounting Office (GAO)—often aggravates this situation by overemphasizing specific details such as the acquisition costs of individual IT projects rather than assessing the overall impact on productivity. Instead, effective oversight should foster the analysis of work processes and formulation of strategic plans that integrate information technology with agency missions. Oversight agencies are in an excellent position, given their independent status, to identify and promote opportunities for cross-agency sharing of capabilities.

In particular, OIRA is charged under the Paperwork Reduction Act to provide leadership and oversight for the information resources management activities of federal agencies. Historically, OIRA has placed more emphasis on regulatory and paperwork review responsibilities than on leadership and information policy. The Administrator of OIRA is committed to improving OIRA's performance in the information area.³ The seeds of change have been sown. Nurturing them will require resources and expertise from the central agencies, and a new partnership between OIRA, GSA, and the agencies.

In a few cases where oversight agencies have attempted coordination, the results have been positive. For example, in 1988, OMB analyzed the use of information technology by the Customs Service, the Immigration and Naturalization Service (INS), and the State Department to check the names of persons entering the United States against a master list. Finding duplication of effort and little sharing of information, OMB worked with the

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agencies to create the Interagency Border Inspection System (IBIS), jointly funded and operated by the three agencies. IBIS allowed Customs and INS to redesign their work processes. INS agents now conduct all name checks, freeing Customs agents to inspect baggage—thereby improving enforcement and speeding the processing of legitimate transfers.

An even more powerful example of successful coordination has been the work of the High Performance Computing, Communications, and Information Technology Subcommittee which coordinates the multi-agency High Performance Computing and Communications Initiative. By coordinating and sharing resources and expertise among 12 federal agencies, this interagency working group, under the leadership of the White House Office of Science and Technology Policy, has created a \$784 million program that is expanding the nation's computing capabilities.⁴ This, and other programs, should be models for the type of coordination across government to realize IT's full potential in reinventing government.

ACTIONS

1. Plan for effective use of information technology throughout government. (2)

By January 1994, the Information Infrastructure Task Force (IITF) should expand its work to include a Government Information Technology Services (GITS) Working Group. At a minimum, the working group will be composed of representatives from OMB and agencies directly affected by the recommendations made in this report, e.g., the Departments of the Treasury, Justice, Defense, Energy, Agriculture, Commerce, Health and Human Services, Housing and Urban Development, and the General Services Administration. The GITS Working Group will assist the IITF in performing the following:

- Developing a strategic vision for using information resources within the federal government. This vision will define an overall program and plan for IRM in the federal government and should include specific models of operation, goals for improving government use of IT in mission performance—both across and within agencies—and measures for improving service to the public.
- Developing strategies to improve leadership and authority within federal agencies, and to include information resources management in agencies' mission strategic planning.
- Setting priorities for federal information resources management and assess the adequacy of resources to support and facilitate important goals.

In addition, the GITS Working Group should perform the following:

- Develop an implementation plan for the recommendations made in this report.
- Work with state and local governments and private sector advisers to promote cooperation and information sharing.
- Establish a continuous improvement plan and process to design, develop, and implement technology-enabled, governmentwide business initiatives—the *electronic government* as described in this report.
- Identify additional opportunities and oversee follow-up on those opportunities for sharing information resources across agencies to improve program performance.
- Use existing interagency groups such as the Federal IRM Policy Council (FIRMPoC) for assistance where applicable.

2. Coordinate and oversee implementations of information technology plans. (2)

STRENGTHEN LEADERSHIP IN INFORMATION TECHNOLOGY

Beginning November 1993, OMB should:

- In coordination with the GITS Working Group and GSA, convene (or use existing) interagency teams, chaired by an appropriate program agency, to share information, solve common problems, and represent the government to the public on specific cross-cutting information technology matters.
- Revise OMB Circular A-130 to encourage the integration of agency IRM plans with agency strategic plans and budgets via the creation of strategic IT plans and performance measures.
- Ensure adequate OMB staff expertise to exercise effective leadership of federal information and IT activities. This function should combine technical expertise in information computing and communications, government

operations, and service sector innovation. This function must be integrated with—not isolated from—OMB's other management and budget oversight functions. This integration will ensure that OMB speaks with one voice on information and IT issues, and that agencies can rely on consistent guidance.

Endnotes

1. U.S. Office of Management and Budget, *Information Resources Management Plan of the Federal Government* Washington, D.C.: U.S. GPO, 1992, p. 3.
2. U.S. Congress, House, Committee on Government Operations, Subcommittee on Government Information, Justice, and Agriculture, hearing on Agricultural Stabilization and Conservation Service Computer Systems: Building Another Hubble? September 18, 1990.
3. Katzen, Sally, Administrator of OMB/OIRA, Confirmation Testimony before the Senate Governmental Affairs Committee, May 14, 1993.
4. President William J. Clinton and Vice President Albert Gore, Jr., *A Vision of Change for America*, Washington, D.C.: U.S. GPO, 1993, p. 54.

IMPLEMENT ELECTRONIC GOVERNMENT



INTRODUCTION



Citizens and government workers contend with an increasingly complicated array of federal agencies, organizations, processes, and forms. The existing service delivery system is largely based on hierarchical design structures developed in the 1930s. The result is slow, inefficient service that may not satisfy actual customer needs. The information needed for sound decisionmaking and high-quality customer service is not coordinated across government agencies, thus increasing cost and time to provide services. In short, today's government structures, processes, and business practices, which were designed for a different era, cannot keep up with the existing types and volumes of customer demands.

Information technology will be the key to providing more cost-effective and user-friendly government services. Industry examples illustrate how exploiting technology can provide superior customer service, significantly decrease costs, increase quality, and improve overall effectiveness and competitiveness. Successful applications of information technology also can be found in federal, state, and local government. Moreover, the Office of Management and Budget estimates that by the year 2000, approximately 75 percent of public transactions will be processed electronically.¹

The requirement to address ever-more constrained operating budgets makes integration of information technology into all phases of the federal workforce vital to meeting service demands of the American public.

Information technology must not be applied haphazardly or sporadically. It also must not be used simply to automate existing practices. Instead, information technology must be seen as the essential infrastructure for the government of the 21st century—a modernized *electronic government*. Electronic government will allow citizens broader and more timely access to information and services through efficient, customer-responsive processes—thereby creating a fundamental revision in the relationship between the federal government and everyone served by it.

Electronic government will enable the creation of "virtual agencies" which will give citizens access to integrated program information and services organized around service "themes" (e.g., unemployment assistance), rather than bureaucratic—and often idiosyncratic—structures. In a virtual agency, several interconnected federal organizations will be able to provide information and services in a seamless manner.

In electronic government, highspeed telecommunications links (information highways) will carry the data necessary to

IMPLEMENT ELECTRONIC GOVERNMENT

support governmental operations. These information highways will connect federal, state, and local governments, and help form a National Information Infrastructure (NII) made up of public and private transmission circuits and information services. Existing components of the NII are the nation's telecommunications carriers; Internet, which serves both government and private sector as a pathway for electronic mail and data; public libraries; and the electronic settlement services that support the automated teller machines and credit cards that facilitate the flow of funds nationwide.

A conceptual subset of the NII is the Government Information Infrastructure (GII). The GII is the portion of the NII used exclusively by the government; it will be composed of all the electronic services and paths that support government operations. Existing components of the GII are the computer systems that facilitate the payment of monthly Social Security benefits, the FTS2000 telecommunications system the federal government uses for voice and data communications, internal networks run by individual government agencies, and the wealth of data and information that the government makes available.

The following seven initiatives, which NPR proposes implementing on a fully operational or pilot basis, would develop new components to the GII. Numerous other opportunities for expanding the GII exist. These initiatives are highlighted because work is already in progress on their development and they offer significant pay-back opportunities:

- integrated electronic benefit transfer,
- integrated electronic access to government information and services,
- National Law Enforcement/Public Safety Network,
- intergovernmental tax filing, reporting, and payments processing,
- International Trade Data System,
- National Environmental Data Index, and
- governmentwide electronic mail.

Endnote

1. U.S. General Accounting Office, *Comptroller General's 1989 Annual Report, Facing Facts* (Washington, D.C.: U.S. General Accounting Office, 1990), p. 28.

IT02: IMPLEMENT NATIONWIDE, INTEGRATED ELECTRONIC BENEFIT TRANSFER

CONVENIENT, SECURE FUNDS RECEIPT AT THE PRESS OF A BUTTON

A single mother, recently laid off from her job, goes to the grocery store with her new smart benefits card. She uses it to pay for her groceries. The amount of her purchases is automatically debited from her monthly food stamp entitlement.

BACKGROUND

Each year, tens of millions of citizens receive government services, either directly from the federal government or indirectly through state and local governments or third parties. The number of recipients of government benefits is large—and is projected to grow.

- In the U.S. Department of Agriculture (USDA) Food Stamp Program, enrollment averaged 25.4 million persons per month in 1992 and had increased to 27.4 million persons by March 1993.¹
- Approximately 31.4 million low-income people receive monthly authorization for medical assistance through Medicaid.²

- Monthly disability insurance benefits are drawn by more than 4.3 million former workers and their dependents.
- The Social Security Administration is expected to distribute more than \$450 billion annually to 44.3 million beneficiaries by 2000.³

Provision of these benefits relies primarily on paper-based systems—such as checks, vouchers, or coupons—that are not always customer-friendly, are inefficient and expensive to operate, and are subject to fraud and abuse.

The USDA Food Stamp Program provides an excellent example. It is perhaps the most paper-intensive of all federal benefits programs. Over 3 billion Food Stamps are printed yearly and distributed monthly in the form of coupon booklets to over 10 million households. Each month, 210,000 authorized food retailers receive the coupons in exchange for eligible food items. The retailers carry stacks of Food Stamps to 10,000 participating financial institutions which credit the store accounts for their value. The banks send the redeemed Food Stamps to a Federal Reserve Bank which again counts the coupons, credits the banks' account, bills the U.S. Treasury for the value of the food coupons, and destroys them. Food Stamps cost federal and state governments approximately \$400 million per year

in administrative expenses to print, ship, store, distribute, reconcile, and destroy.⁴ The paper aspect of Food Stamps also creates management control vulnerabilities and ample opportunities for fraud and abuse.

The Food Stamp Program, together with similar inefficient, outmoded, paper-based systems, can be replaced by proven, cost-effective technology. Electronic benefit transfer (EBT) is already successfully, and cost effectively, used by the federal government. EBT adopts commercial electronic payment practices to the delivery of government assistance services, enabling benefits to be transferred electronically. Presently, direct federal payment programs such as Social Security, Supplemental Security Income, federal pensions, and veterans benefits are a mixture of electronic direct deposit and paper check issuance.

The savings entailed by converting to EBT are significant. For example, the roughly 450 million paper check payments made per year cost taxpayers up to six times more to deliver than those electronically deposited. Making the transition from physical paper transactions, which cost 36 cents per transaction compared to 6 cents per electronic transaction, would reduce benefits delivery costs by over \$100 million per year.⁵

Recent pilot projects to replace paper-based benefits systems with EBT also confirm that electronic benefit delivery can reduce costs. The Secretary of USDA reported that using EBT for government issuance of food stamps saved 24 percent in operating costs in pilot projects in New Mexico and 3 percent in Minnesota. Retailers also benefit: the study showed that cost to retailers dropped by an average of \$3.98 per \$1,000 in Food Stamp product sales in New Mexico, and by \$9.09 in Minnesota. EBT issuance of Food Stamps also benefits banks that participated in the pilot; their cost fell by \$3.17 and \$5.48 per \$1,000 of benefits redeemed in New Mexico and Minnesota, respectively.⁶ The estimated loss due to fraud related to Food Stamp benefits dropped by 75 percent in New Mexico and 81 percent in Minnesota.⁷

NEED FOR CHANGE

A major expansion of electronic delivery of federal benefits has not been possible in the past for several reasons, including

- lack of banking service accessibility;
- lack of availability of a low-cost alternative to receiving and cashing a government check;
- legislative restrictions limiting flexibility to select a particular method of payment; and
- people's natural resistance to change, e.g., trusting electronic direct deposit.

These reasons are no longer impediments to nationwide electronic benefit delivery. EBT can provide basic bank-like services in neighborhoods where no physical banks exist. Paper check processing has become more expensive than electronic direct deposit. Congress and the public are more receptive to alternative delivery methods. This receptivity is evidenced by recent congressional action permitting EBT as an operational alternative to issuing food coupons and by the overwhelming recipient preference of EBT over food coupons in all EBT demonstration sites.

Compatibility with commercial electronic transaction networks is a critical requirement for retail merchants and financial institutions. EBT could be processed concurrently with commercial electronic transactions by adopting the specific standards and rules promoted by the American Bankers Association and used by the major commercial direct debit point-of-sale and automated teller machine (ATM) networks. This compatibility would allow government transactions to be processed along with existing commercial financial transactions, exploiting previously defined nationally and internationally accepted standards. Industry's support is vital to successful implementation of EBT, especially for federal-state administered programs such as Food Stamps; Special Supplemental Food Program for Women, Infants, and Children (WIC); Aid to Families With Dependent Children (AFDC); and child support.

The most effective implementation of EBT would be nationwide delivery of multiple, integrated benefits using the existing commercial infrastructure—e.g., electronic funds transfer network, commercial banking, credit/debit card authorization and settlement/interchange networks, and the Federal Reserve's Automated Clearing House system. Benefits that could be delivered over this network include Food Stamps, veterans benefits, student aid, medical assistance, housing programs including assistance payments to families and individuals, unemployment insurance, Social Security, Supplemental Security Income, AFDC assistance, child support, and WIC assistance.

The nationwide EBT system would use direct deposit of benefits and plastic access cards to replace Food Stamp coupons, AFDC checks, WIC vouchers, Medicaid authorization cards, state general assistance checks, housing assistance checks, etc. This approach would dramatically improve recipient services, combat fraud and abuse, and save millions in yearly operating costs for federal and state governments.

Federal payments would be deposited directly into recipients' bank accounts. For recipients without bank accounts, or those who prefer not to involve their banks, a federally sponsored electronic account accessible by an EBT card could be established. For recipients without a bank account who are at or below the poverty level, a free electronic service (e.g., a fixed number of free ATM or point-of-sale transactions per month) could be provided. Funding for this service could come from savings achieved by the federal government through conversion to direct deposit.

For public assistance programs jointly administered by federal and state governments, EBT could dramatically simplify the delivery of separate program benefits to eligible recipients. Ultimately, a single government services plastic benefits card could be issued instead of separate cards for each program. By using one comprehensive EBT infrastructure, federal and state agencies can

share both start-up and ongoing operating costs associated with the delivery of government benefits to the public. As a result, all stakeholders should experience lower operating costs and provide measurably improved customer service.

Certain issues need to be addressed before a nationwide EBT system can be fully developed.

- Although much benefit is gained by leveraging the existing infrastructure, there are several liability and policy issues to be considered. For example, the Federal Reserve Board in February 1993 proposed making Regulation E of the Electronic Funds Transfer Act applicable to EBT. Regulation E governs electronic transaction liability in the private sector; it would make federal and state governments liable for the replacement of recipient benefits reported lost or stolen, without regard to recipient responsibilities. If Regulation E stands as written, some form of intergovernmental EBT insurance fund and stronger program recipient disqualification regulations might have to be established. The cost of this regulation and the potential increase in welfare fraud could effectively deter or even halt EBT expansion.
- To avoid the development of incompatible systems and to realize substantial operating cost reductions through volume (economies-of-scale) pricing, EBT efforts will need to be coordinated nationally while these systems are still in their infancy.

ACTIONS

1. Design an integrated EBT implementation plan. (2)

An existing interagency team, the Electronic Benefit Transfer Task Force, chaired by OMB's Deputy Director of Management, is defining the roles, responsi-

bilities, and changes required to implement EBT nationwide. This task force should periodically report on its progress to the GITS Working Group and the Vice President and should complete the implementation plan by February 1994.

The most effective implementation of EBT is nationwide delivery of multiple, integrated benefits which leverages the existing commercial infrastructure. Ongoing benefits delivery improvement efforts should be accelerated. These efforts include implementing electronic delivery of Food Stamps by USDA's Food and Nutrition Service and direct benefit delivery by the Department of the Treasury's Financial Management Service, the Social Security Administration, the Office of Personnel Management, and the Railroad Retirement Board.

The initiative should press for (1) integrating a package of benefit programs for electronic payment, including Food Stamps, Social Security benefits, and AFDC; and (2) sequencing their implementation to ensure that each new benefit program added builds on prior successes. The initiative should use government and local EBT experiences to pilot and implement integrated benefits delivery nationwide.

The implementation plan should include recommendations on various resource issues, such as cross-agency administrative cost pooling, funding strategies, organization and staff support; and should establish a calendar with key milestones for progress measurement and review.

2. Legislation should be enacted to facilitate nationwide implementation of EBT. (2)

The Director of OMB should direct the Electronic Benefit Transfer Task Force to perform the following policy and legislatively oriented tasks. The team should draft a report of its activities by March 1994.

- Review existing legislation and regulations for each program that may affect nationwide implementation of EBT and draft appropriate changes. For example, one key issue concerns the

applicability of Regulation E to EBT. Examine the comments submitted in response to the Regulation E proposal making it applicable to EBT, and determine a governmentwide position on recipient liability in EBT processing.

- Adopt a uniform EBT services pricing structure and attendant funding agreements. Identify standard categories and construct an EBT processing pricing structure to include capture and financial settlement of transactions by and among processing centers and networks, including industry and federal and state operations. Within the pricing structure, address cross-program cost effectiveness. This should maximize the benefits of economies of scale, leverage the commercial direct debit infrastructure, and ensure that cost-effective criteria are used to facilitate and expedite the migration to EBT.
- Define a settlement process that is the financial reconciliation of all debit and credit transactions on a daily basis. High-volume/same-day settlement processing is required to support EBT. This processing closely aligns with and can leverage the financial services industry's current settlement exchange system. The Treasury's Financial Management Service and the Richmond Federal Reserve Bank are in the process of assessing implementation approaches.
- Develop integrated EBT program and operating rules. For example, recipient responsibilities presently vary among different benefit programs. Obtain agreement across programs on how to combine program requirements into a uniform set of EBT rules and responsibilities. Review and modify ongoing efforts to adapt industry's electronic transfer operating procedures and rules. Coordinate with private sector entities to define the government EBT system: this includes technical consid-

erations such as standards and type of equipment deployed, security and privacy protection, and operating rules, (e.g., roles and responsibilities of all parties, liabilities, indemnifications, and settlement timing).

- Define benefits delivery options. The presumed method of payment for all new enrollees in direct federal programs would be direct deposit or EBT service. While total conversion from paper checks to electronic payments is the goal, it probably is best to start with a highly publicized voluntary direct deposit program and phase in EBT service over a 3-year period. However, a voluntary dual paper-based and EBT system is not the preferred method for the federal-state administered programs, especially for the Food Stamp Program. An objective shared by the Food and Nutrition Service, food retailers, and financial institutions is to eliminate paper coupons, not create a dual-delivery system. A dual sys-

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Savings were estimated solely from the replacement of checks and coupons with electronic transfer of benefits.⁸ Additional benefits from reengineering and streamlining were measured.

This estimate is based on the latest empirical data (reflects New Mexico and Minnesota pilots) on administrative costs, design, development and implementation investments, program loss, float, and non-government participant costs in EBT projects involving more than 58,000 cases. This estimate does not include the impact of unredeemed coupons because no empirical data are available. Benefit programs covered by this estimate include Food Stamps, AFDC, Old Age and Survivors Insurance and Disability Insurance (SSA), Supplemental Security Income, veterans retirement and medical benefits, and federal retirement benefits. Benefit programs not in these estimates include housing, student aid and medical loan benefits.

Budget Authority (BA) and Outlays (Dollars in Millions)

	Fiscal Year					Total
	1995	1996	1997	1998	1999	
BA	-118.7	-119.8	-280.9	-308.4	-350.0	-1,177.8
Outlays	-118.7	-119.8	-280.9	-308.4	-350.0	-1,177.8
Change in FTEs	cbe	cbe	cbe	cbe	cbe	cbe

tem would be too costly to manage, hinder the interstate flow of transactions, cripple efforts to obtain economies-of-scale pricing, and defeat efforts to combat fraud and abuse in the trafficking of coupons. Consumer and recipient advocacy groups will need reassurance that strong recipient preference exists for EBT and that adequate privacy safeguards are in place. Additionally, how quickly EBT can be implemented in 210,000 grocery stores nationwide is debatable, but a 4- to 5-year time frame appears feasible.

Cross References to Other NPR

Accompanying Reports

Improving Financial Management, FM04: Increase the Use of Technology to Streamline Financial Services
Department of Agriculture, USDA07: Deliver Food Stamp Benefits Via Electronic Benefits Transfer to Improve Service to Customers While Remaining Cost Effective

Endnotes

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2. Ford, Melvina, *Medicaid: FY 1994 Budget*, (Washington, D.C.: CRS, June 30, 1993), p. ii.
3. Gould, Stephen B., *Computing and Telecommunications in the Federal Government*, CRS Review (July-August 1990), p. 4.
4. Conversation with Joe Leo, Food and Drug Administration, July 29, 1993.
5. See U.S. Department of the Treasury, Financial Management Service, (working paper). *EFT Cost Savings for FY1992*, undated.
6. U.S. Department of Agriculture, Food and Nutrition Service, Summary of *The Impacts of State-Initiated EBT Demonstrations on the Food Stamp Program* (Washington, D.C., July 1993), pp. 1-2.
7. U. S. Department of Agriculture, Office of Public Affairs, *Espy Encourages Electronic Issuance Of Food Stamps by All States* News release No. 0588.93, Washington, D.C., July 19, 1993, p. 1.
8. Estimates of EBT savings are dependent upon a number of variables that may change the fiscal impact of this recommendation. The variables include the extent to which the private sector invests in the EBT infrastructure; the extent to which benefit delivery systems can piggy-back on already existing commercial networks rather than paying to install point-of-sale terminals in food stores; the charges for electronic funds transactions; whether transaction costs remain the same once federal and state governments become dependent on financial institutions to deliver benefits; whether cash payment receipts must pay fees for any of their ATM transactions; whether the Federal Reserve Board continues with its plan to give EBT card users the same protection against theft that ATM and credit card users receive (Regulation E); and the varying efficiency of the current paper system (which is more efficient in some programs and states than others).

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QUICK RESPONSE, COMPLETE INFORMATION, AND A HAPPY ENDING TO TELEPHONE TAG

A recent retiree goes to a government services kiosk, located at his local post office. He wants information about his retirement benefits. After requesting his Social Security Number and other personal ID information, the kiosk prints a summary of his Social Security contributions, as well as the benefits to which he is entitled as a veteran. His annuity distribution options are included on the printout, as are all of the rules governing earning income while collecting retirement benefits. The kiosk then asks him if he wants related information on retirement, information on senior citizens groups—and brochures on collecting stamps as a hobby.

BACKGROUND

The government's primary mission is to provide quality services to the public in a timely manner. However, access to government services is cumbersome, uncoordinated, and not customer friendly. If more than one

agency is involved, a customer must go through two or more rounds of inquiries, with frequent routings from one government employee to another.

Several recent government initiatives involving various information access methods are improving service to citizens by making information more readily available. Several of these initiatives are described below.

Telephone Access. Industry pioneered the use of the telephone to provide services to customers. Toll-free numbers and guided questions by either a human or computer speed callers to needed services. Call receipt is logged and automatically distributed, and responsiveness to customers can be measured.

The government has begun to incorporate telephone-based techniques to improve access to its services. For example, 70 percent of taxpayer contacts with the Internal Revenue Service (IRS) are now conducted by telephone. The IRS has made major improvements in the accuracy of its telephone service information and is able to resolve many taxpayer problems in a single phone call—including accepting verbal statements over the phone. The Social Security Administration (SSA) now receives

over 55 million calls a year requesting information and services over its national 800 number. On a cross-agency basis, the Federal Information Center (FIC), operated by the General Services Administration (GSA), provides 800-number telephone service in major metropolitan areas. The public may call FIC with any question or problem related to the federal government. Information specialists then research the question and either provide an answer or the telephone number of the specific federal office that should be contacted.

Kiosk Access. Federal and state governments are developing approaches to providing information and services through interactive, customer-activated terminals called kiosks, which are modeled after automated teller machines (ATMs).

The use of kiosks can create savings and generate revenues, as well as provide information and services. For example, the Info/California kiosk, a customer-activated terminal implemented by the State of California, has generated major benefits, including lower costs for customers of state information. For example, the kiosk offers a job match service in which customers preregister to determine relevant statewide employment openings. Previously, the job match service cost \$150 per applicant. With preregistration at the kiosk, the cost is now \$40 per applicant. Additionally, a California Department of Motor Vehicle address change costs \$5 in person, \$2 if received in the mail, and \$1 if the transaction is received via the kiosk.¹ The State of Iowa estimates that its kiosk technology saves the state \$6 per birth certificate issued (\$7 manually versus \$1 by kiosk technology).²

SSA is developing a new customer service initiative using kiosk technology to provide a wide range of services. This pilot program, to begin in late 1993, will provide information (retirement and disability benefits information, Supplemental Security Income eligibility requirements, etc.) and direct ser-

vices (processing of entitlements, status of pending claims, etc.).³ The pilot program should result in:

- reduction in claims processing time,
- reduction in paper flow and file retention,
- enhanced customer service through a one-stop shopping concept, and
- increased productivity.⁴

In conjunction with this initiative, SSA, the U.S. Postal Service (USPS), and the Department of Veterans Affairs (VA) are developing a combined government services kiosk.⁵ This kiosk will be a single access point to services provided by the three agencies. Since these three agencies represent a significant share of the federal government's contact with the public, this partnership will have a dramatic effect on decreasing costs by reducing duplicate efforts and improving service by providing public access from more locations.

Additional Access Methods. Many of the recent initiatives to provide electronic access have included the use of personal computers. For example, the Library of Congress has placed a searchable version of its catalog on Internet.⁶ For computational scientists, the Department of Energy, the National Aeronautics and Space Administration, and the National Science Foundation (NSF) research centers have established Internet-accessible libraries of government-sponsored software.

NSF and the National Institutes of Health routinely place their program announcements and various other documents in an easily searchable and retrievable form on Internet. NSF's Science and Technology Information Service is accessed many thousands of times each week for information about NSF activities, funding opportunities, abstracts about research grants, and various reports on science and technology. Access is easy, and is provided at no charge.

The National Technical Information Service (NTIS) operates a publicly accessible dial-up electronic bulletin board system (BBS). This BBS, called FedWorld, provides access to over 100 federal government databases and bulletin board systems. Planning is under way to place this collection on Internet. A study has been completed recently to examine the feasibility of expanding FedWorld into a *locator* service that is a "comprehensive inventory and authoritative register of information products and services disseminated by the federal government," that can "assist agencies and the public in locating federal government information."⁷

The Clinton administration has established Internet mailboxes for the President and the Vice President (e.g., president@whitehouse.gov) for direct electronic mail access by the public. The House of Representatives has a pilot project under way to provide public e-mail to seven congresspersons, and the Senate is expected to announce a similar program shortly. If successful, all members of Congress will eventually be accessible through Internet.

Most new information technology initiatives have their roots in the private sector, since it is the private sector—not government—that is usually first to adapt new information technologies to improve customer service. One example of government and industry working cooperatively to provide services is France's Minitel system. In the early 1980s, the French Government opened its telephone network to provide a wide range of services.⁸ Minitel service is routinely used in homes and businesses. It includes on-line retrieval services, credit reporting services, airline reservations, telephone directories, and government information. U.S. telecommunication and information services companies have begun to offer similar services. The federal government, as a potential customer and a provider of information that could be made available electronically, could stimulate development of these services.

NEED FOR CHANGE

Citizen access to federal government information and services is uncoordinated and not customer-friendly. Individuals must frequently contend with several different organizations and processes in order to complete a single transaction. In turn, the federal government expends an inordinate amount of resources to complete actions. To receive service, a customer must know whom to contact and how to contact that organization; government has not made public access easy. Information technologies may be employed to reduce the complexities that citizens face and consolidate actions required for providing services.

Several organizations have recommended (to different government entities) ideas for employing information technology governmentwide to improve services.

- The Service to the Citizen Intergovernmental Task Force requests one-stop, easy citizen access to information.⁹
- The National Academy of Public Administration asks for electronic access to government services.¹⁰
- The Program on Strategic Computing and Telecommunications in the Public Sector suggests replacing face-to-face services with teleservice and self-service.¹⁰

These organizations are but three of many that are organized and committed to improving government. They advocate the increased use of information technology as a key to improving customer service. However, as similar as their recommendations may be, their suggested implementations are quite dissimilar, pointing to a problem needing action. Further, there is no lead agency or organization that can coordinate the implementation of customer service initiatives. An authoritative charter is needed to trigger progress.

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A true nationwide one-stop 800-number government service does not exist. Access to FIC is limited and not well-publicized. FIC primarily serves customers in certain key metropolitan areas representing approximately 50 percent of the U.S. population. For individuals who live outside these metropolitan areas, FIC's telephone number is not listed in many of their local telephone company directories and may not be available through directory assistance.

In the future, government information collection and distribution could be accomplished directly by the public using electronic kiosks, personal computers, interactive telephone voice response equipment, or other electronic off-the-shelf devices. Interactive computers or electronic kiosks could deliver a wide variety of government services, such as the following.

- **Governmentwide service directories**—access directories of government services, addresses (postal and electronic), and telephone numbers.
- **Change of address service**—automatically transmit, through a single transaction, a new address to all service agencies selected by a customer.
- **Forms and publications**—locate and request copies of government forms and publications; these could be delivered and filled out electronically, printed at the kiosk, or delivered by the post office.
- **Tax filing**—electronically input necessary financial data to allow the IRS to perform tax computations for federal, state, and local governments.
- **Governmentwide information locator service**—perform searches on selected topics, list locations for the information, and provide electronic links to the information.
- **Multimedia and multilingual service delivery**—provide information to meet special needs of clients using video, audio, or multiple languages.

- **Public messaging entry station**—allow entry of messages to government agencies and officials.

Government should form partnerships with the private sector to develop and implement ideas on how to use information technology to provide new and better services. Using the French Minitel model, both government and business services would be accessible. These partnerships will allow the federal government to provide additional services at less cost and will take advantage of lessons learned by industry.

ACTIONS

1. Coordinate, recommend, and implement information technology initiatives to improve customer service. (2)

The Director of the Office of Management and Budget (OMB), should charter an interagency team by January 1994, to coordinate, recommend, and implement information technology initiatives to improve customer service. The progress of this team should periodically be reported to the Vice President. OMB should work with this Customer Service Improvement Team (CSIT) to develop funding strategies. An existing interagency team, the Service to the Citizen Intergovernmental Task Force, may be appropriate for this role. CSIT should work closely with the Government Information Technology Services (GITS) Working Group to ensure complementary strategies exist toward common goals. Membership of this team, as a minimum, should include representation from the following: the GITS Working Group, the Service to the Citizen Intergovernmental Task Force, the FIC, the SSA-USPS-VA kiosk implementation organization, FedWorld, and the National Academy of Public Administration.

As one of its first tasks, this team should develop and test an integrated government-wide "one-stop service shop." This would

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consist of simple "Yellow Pages"-style databases of federal programs, and automated links to the information and service providers. This one-stop shop should include access not only to information (e.g., how to apply for a program) but also the capability to process information (e.g., ability to accept an application electronically from the user). Customer access to this one-stop shop should be available through a variety of means. Access methods should include the telephone, information kiosk, and personal computer. Building blocks for the one-stop shop include the Federal Information Center, government services kiosks, and FedWorld (see actions 2, 3, and 4). Links between these services should be established where feasible, so that these efforts complement one another and are not duplicative, e.g., government services kiosks should be able to link to FedWorld's locator service. A draft strategic plan for development and implementation of the one-stop service shop should be completed by July 1994.

Significant customer service-related applications developed by individual agencies or organizations should be directed to this team. The team will then determine whether those initiatives may be appropriate for governmentwide application. Recommendations from private and public sector organizations should also be considered by this team.

2. Implement an integrated governmentwide national one-stop 800-number calling service. (1)

The Administrator of GSA should develop, by March 1994, an implementation plan for expanding to a national 800-number service to begin by October 1994. Under this plan, a customer should be able to call a single number, and have the call routed by FIC to an individual in the appropriate agency who can respond. (Presently, callers are given agency phone numbers to dial themselves.) FIC's national 800 number should be listed in all local telephone

company directories and be available from directory assistance nationwide.

This national 800-number service should be supplemented by a telephone network of individual agency 800 numbers. Customers who do not know what agency (or number) to call may call this federal government information specialist. Otherwise, they can contact the agency directly. Agencies that do not now offer 800-number calling services should develop implementation plans by March 1994, to provide this service by October 1994.

3. Implement an integrated one-stop government services kiosk. (2)

The Customer Service Improvement Team should coordinate the development and implementation of a one-stop government services kiosk. The SSA-USPS-VA initiative should be used as a model, and as a likely candidate for further development and expansion by additional agencies. It should develop a preliminary implementation plan by July 1994. This plan should identify appropriate agencies and customer services to be included, and time tables for nationwide expansion. The locations of kiosk-based access points to federal government services must be numerous and nationwide in order to facilitate customer access to information and services. Existing agency kiosk systems will need to be examined for the feasibility of upgrading them to include the services of the one-stop government services kiosk.

The kiosk concept is proving itself viable in delivering fast and efficient government services to the public. However, before it is used to collect and deliver sensitive information such as financial data, critical issues including user authorization, privacy, and network security must be addressed.¹²

Access to services through the electronic kiosk could be controlled in the same manner as access to ATMs. A kiosk access card could be used to access personal information in government files, including Social Security account balances and security back-

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ground information reports. More general access could be provided without restriction for information on federal programs and to government yellow and white pages directories.

The functionality of a kiosk access card could also be expanded through smart card technology. Smart cards could be used for additional purposes such as storing and distributing data. This card could then be used for electronic transfer of funds or to allow the user to receive federal, state, and local benefits.

4. Implement an integrated governmentwide one-stop electronic bulletin board system. (2)

The Customer Service Improvement Team should develop an integrated one-stop electronic BBS by upgrading NTIS' FedWorld. A preliminary implementation plan should be developed by July 1994. This system should enable customer access, from a personal computer, to government information, services, and databases via easy-to-use interfaces. The upgraded FedWorld should not only be a locator service to federal information, but be capable of "closing the deal," and providing the information. Customers must be able to retrieve information from the databases, order copies of reports, and connect, via links, to other government information and services providers.

5. Work with private industry to advance the implementation of technologies that provide citizen access to government information and services. (2)

The Customer Service Improvement Team should begin to implement a program, by October 1994, that actively encourages private sector investment in technologies that will enhance public access

to the government. Partnerships with industry should be developed that encourage and provide incentives for industry to assist government in improving customer service. A strategic plan for this program should be developed by July 1995.

FISCAL IMPACT

Many new customer service initiatives require investment for implementation, and funds for ongoing operations. The initiatives proposed by these customer service recommendations, including creation of the Customer Service Improvement Team (CSIT), are new services not currently captured in the 1994 budget. Costs associated with implementing a nationwide 800 service are a direct result of expected increases in volume at the Federal Information Center (FIC) and the conversion of agency toll service calls to toll-free service. Kiosk service costs reflect hardware, software development, installation, maintenance, upgrade, and telecommunications costs. Bulletin Board System (BBS) costs are for upgrading FedWorld to provide the necessary links to services, information and databases residing on various agency systems and on the government services kiosk system.

Cost savings are not initially anticipated by the application of information technology to provide these services. The increase in the availability of access points for citizens to interact with government will create a substantial increase in the volume of government services requested. The automation that will be provided by these systems will be necessary to process the increased volume. In order for significant savings to occur, automation will have to replace manual processes, not augment them. Costs are summarized on the following page.

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Cost (Dollars in Millions)^A

	Fiscal Year					Total
	1995	1996	1997	1998	1999	
Budget Authority						
CSIT ^B	0.3	0.3	0.3	0.3	0.3	1.5
800 service ^C	10.0	9.8	9.8	9.8	9.8	49.2
Kiosk ^D	2.9	7.0	8.8	10.5	12.2	41.4
BBS	8.5	7.5	4.5	4.5	4.5	29.5
Total	21.7	24.6	23.4	25.1	26.8	121.6
Outlays						
CSIT ^B	0.3	0.3	0.3	0.3	0.3	1.5
800 service ^C	10.0	9.8	9.8	9.8	9.8	49.2
Kiosk ^D	2.9	7.0	8.8	10.5	12.2	41.4
BBS	8.5	7.5	4.5	4.5	4.5	29.5
Total	21.7	24.6	23.4	25.1	26.8	121.6

A. Costs in FY 93 dollars. Numbers do not reflect the savings resulting from automation.

B. Customer Service Improvement Team.

C. Based on 4.5 million calls per year for the national 800 number and the conversion of 10 million calls per year from toll-based to toll-free status for agency 800 numbers.

D. Based on the installation of 50 kiosks in FY 95 and 100 per year in FY 96-99. Estimates only reflect costs associated with kiosks developed in FY 95 and beyond and do not reflect ongoing expenses for kiosks already in place prior to FY 95. Additional costs would be incurred to upgrade or reconfigure existing individual agency kiosks in order to provide the capability of the governmentwide kiosk.

Cross References to Other NPR

Accompanying Reports

Improving Customer Service, ICS01: Create Customer, Driven Programs in All Departments and Agencies That Provide Services Directly to the Public

Reinventing Support Services, SUP02: Assure Public Access to Federal Information

Transforming Organizational Structures, ORG05: Sponsor Three or More Cross-Departmental Initiatives Addressing Common Issues or Customers

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11. John F. Kennedy School of Government, Program on Strategic Computing and Telecommunications in the Public Sector, "Service to the Citizen: Information technology and customer service excellence in government," Harvard University, May 1993, p. v. (Draft.)

12. See IT-10: Develop Systems and Mechanisms to Ensure Privacy and Security.

IT04: ESTABLISH A NATIONAL LAW ENFORCEMENT/ PUBLIC SAFETY NETWORK

INTEGRATED COMMUNICATIONS SIMPLIFY EMERGENCY RESPONSE

A fire following an earthquake is devastating a large urban area in northern California. Several local, state, and federal agencies—including fire and police units, state highway units, and national guard and defense units—are rushing to the scene. Even though they come from different jurisdictions, the units coordinate easily because they share a common communications system. The fire is contained quickly, emergency services are dispatched where needed, lives are saved, and property loss is reduced as a result.

BACKGROUND

Whether the situation is responding to a natural or technological disaster, or performing search and rescue or interdiction activities, federal, state, and local law enforcement and public safety workers must be able to communicate with each other effectively, efficiently, and securely. Most of this communication occurs over tactical land mobile radio systems.

However, interoperability across these different radio systems is difficult to achieve.

Federal, state, and local law enforcement agencies operate in different parts of the radio spectrum. Complicating this problem is the lack of security on most systems, leaving them open to interception and monitoring. When security is applied to the radio systems—as is done with many federal radio systems—interoperability depends on having the correct encryption key to communicate.

Moreover, every federal, state, and local law enforcement agency operates separate tactical networks in every metropolitan area in the country. Often, there are several independent network control centers operating within the same federal building with no interoperation. This expensive duplication of effort prevents the use of spectrally efficient equipment and results in less-than-optimum coverage for many agencies. In addition, technical and administrative support is duplicated throughout the federal government.

NEED FOR CHANGE

Recently, the National Telecommunications and Information Administration, a part of the Department of Commerce, mandated that federal radio users begin the transition to more spectrally efficient (digital narrowband) radio systems beginning in

1995. The Federal Communications Commission is currently addressing this same issue applicable to state and local law enforcement and public safety. The Associated Public Safety Communications Officers, Inc., is sponsoring a federal, state, local, and industry effort to develop technical standards for the next generation narrow-band digital radio systems.

Over the next 10 to 15 years, all federal government radio systems will be replaced with digital technology. If this is done on an agency-by-agency basis—as was done in the past—the cost will be enormous and the same problems with interoperability will occur, resulting in costly redundancies of equipment and staffing. Current budget conditions make it critical that the federal law enforcement, public safety, and disaster response agencies coordinate the transition to digital narrowband systems. Only through a coordinated approach will cost savings be realized and the serious interoperability problems of the past be overcome.

An excellent mechanism for addressing these complex issues—and saving considerable dollars—is a shared infrastructure: a National Law Enforcement/Public Safety Wireless Network. Development of this network can be based on the efforts of two ongoing interagency initiatives.

- The Federal Law Enforcement Wireless Users Group, a joint Treasury-Justice Department initiative, was formed to plan and coordinate future shared-use wireless telecommunications systems and resources.
- The Communications Interoperability Working Group, which consists of representatives from the Department of Defense, Coast Guard, and federal law enforcement agencies, under the auspices of the Office of National Drug Control Policy, has been defining minimum baseline requirements for current, secure, interoperable federal radio systems.

These new technological advances will permit the deployment of intelligent radio systems that are feature enhanced, spectrally

efficient, and secure. Interoperability will be accomplished, and the radio system can be connected to other fixed networks to improve the flow of information—e.g., fingerprints, mug shots, or criminal records to the uniformed officer or special agent on the street. A consolidated approach will result in numerous cost and quality of service advantages.

ACTIONS

1. Formalize the Federal Law Enforcement Wireless Users Group. (1)

The Secretary of the Treasury and the Attorney General will co-sign a memorandum of understanding (MOU) to formalize the Federal Law Enforcement Wireless Users Group by January 1994. The MOU should define the charter and membership of the group, which should include—at a minimum—representation from all Justice and Treasury law enforcement agencies and bureaus, with participation from other federal, state, and local law enforcement and public safety stakeholders.

2. Establish a National Law Enforcement/Public Safety Wireless Network for use by federal, state, and local governments. (2)

The President should issue a memorandum by January 1994, directing the Federal Law Enforcement Wireless Users Group to coordinate establishment of an intergovernmental wireless network.

The users group should work with the Office of Management and Budget, the National Telecommunications and Information Administration, the Communications Interoperability Working Group, the Federal Emergency Management Agency, and state and local entities to:

- further define costs and benefits, and develop budget strategies; and

IT04: ESTABLISH A NATIONAL LAW ENFORCEMENT/ PUBLIC SAFETY NETWORK

- develop an implementation plan for the National Law Enforcement/Public Safety Network to cover the next 10 years.

Responsibilities must be clearly defined, since the issue of which agency or activity funds and controls the network will be a point of contention. Establishment and use of the network must be handled at the highest level to avoid turf conflicts and to focus on goals, roles, methods, and relationships.

FISCAL IMPACT

The cost of replacing the federal law enforcement land mobile radio systems is conservatively estimated to be \$4.885 billion. In order to meet the National Telecommunications and Information Administration (NTIA) mandate decreed by congressional initiatives to improve

spectrum efficiency, between 1995 and 2005 these systems must be replaced with new (digital) radio equipment which will operate in a narrower bandwidth.

A 25 percent savings (\$1.22 billion) in this one time investment in replacement costs for these systems could be realized by a coordinated approach and by establishing a national law enforcement/public safety wireless network. Additional cost savings would result from the efficiencies achieved in operations and maintenance, plus a possible merging of federal, state, and local public safety radio networks.

Cross References to Other NPR

Accompanying Reports

Transforming Organizational Structures, ORG05: Sponsor
Three or More Cross-Departmental Initiatives Addressing
Common Issues or Customers

Department of the Treasury, TRE01: Improve the
Coordination and Structure of Federal Law Enforcement
Agencies

IT05: PROVIDE INTERGOVERNMENTAL TAX FILING, REPORTING, AND PAYMENTS PROCESSING

HOW TO GET TO BED EARLY ON APRIL 14

On April 15, a citizen receives a notice in the mail from her state tax office. It contains a bill for her annual state and federal taxes, and was calculated from records submitted electronically by her employer and her bank. She verifies the bill, dials an 800 number, and pays her taxes by credit card. Her state and federal taxes have now been completed in a matter of moments—with no annoying forms to fill out.

BACKGROUND

U.S. taxpayers use and prepare financial data separately in reporting tax information to federal, state, and local governments. Although in some cases, the base level information required by the Internal Revenue Service (IRS) is used by the states, the filing form or information input follow separate and distinct paths.

Efficient business practices require that a framework for a "single information flow" be developed based on the premise that once

data is entered, it serves the needs of the entire enterprise. This enterprise could be defined as all federal, state, and local government agencies that require the same data from a reporting source. For example, corporations or small businesses would report employee wages and withholdings to a single government access point. Upon receipt by the agency, the data could be used to update appropriate records held by the IRS, Social Security Administration, Department of Labor, Department of Veterans Affairs, state agencies, etc. This approach is but one of a series of steps toward a virtual agency and one-stop access for intergovernment transactions.

There are enormous costs associated with tax data processing. The IRS annual operating budget for fiscal year 1992 was \$6.7 billion to collect \$1.12 trillion in revenues. To collect these revenues, the IRS processed 1 billion tax information documents and 204 million tax returns.¹ The federal, state, and local aggregated collection costs are unknown due to the many types of taxes levied and the circuitous filing paths for the various sales, real estate, property, income, and payroll taxes. Innovative approaches to tax collection could lower overhead costs significantly and simultaneously improve

customer service by reducing the burdensome, redundant filing techniques used today.

NEED FOR CHANGE

Federal, state, and local government policies need to foster close, cooperative intergovernmental and interagency relationships that eliminate unnecessary duplication of effort and promote enhanced citizen access to information and services. Joint electronic filing of wage and tax data is perhaps one of the best examples of an application that embodies these policies.

The IRS, Social Security Administration (with support from the Office of Management and Budget), and Department of Labor are conducting a Wage Reporting Simplification Project (WRSP). Cross-agency approaches like WRSP should help ensure that "reporting once" pilot programs will be in place in less than 2 years. Reporting once should include providing financial data required to other agencies such as the Department of Health and Human Services for entitlement purposes and the Department of Labor for unemployment considerations. The phase 1 feasibility study for WRSP identifies potential life cycle savings of \$1.7 billion to participating government agencies and \$13.5 billion in reduced burden to private sector employers.²

An intergovernmental, single information flow concept for tax filings, reporting, and payments processing will provide a seamless government for the benefit of the taxpayer. Technology is present that will enable the concept.

The IRS is embarking on a comprehensive Tax Systems Modernization program. Although the IRS automation effort will significantly lower the cost of filing, auditing, and processing annual income tax data, reengineering must be a vital part of the overall modernization strategy.

This reengineering should include a broader intergovernmental perspective and address new ways to conduct business with

taxpayers, business, financial institutions, and state and local governments. For example, tax information for a large number of taxpayers is already available to the IRS prior to taxpayers' annual filing. Financial institutions, employers, and others report comprehensive financial information about individuals to the IRS electronically or on paper. Reported information includes wages, earnings on investments, and certain financial transactions. The IRS thus has in hand all the information it needs to compute taxes for 60 million filers. Yet it still sends out over 5 boxcars of forms and requires taxpayers to compute what the agency already knows. This practice continues because, in most cases, these data are not converted to electronic format for easy use until after taxpayers have filed their tax returns. IRS could calculate returns and send a statement. So could a state government, based on the same file. If IRS did this and if electronic filing is used for all other individual income tax filings, the IRS and state agencies would no longer need to mail the equivalent of over 75 boxcars of forms.

ACTIONS

1. Integrate government financial filings, reporting, and payments processing. (2)

The President should issue a memorandum by January 1994, directing the Department of the Treasury to implement integrated financial filings, reporting, and payments processing by January 1997.

This integration should address such areas as individual tax filing and account settlement; business reporting, including wage and withholding information; data from financial institutions; and other employer and employee financial data required by federal, state, and local government agencies.

The integrated filing, reporting and payment processing program should be piloted by the IRS to prove the concepts and quantify the benefits—not only to citizens in

terms of enhanced governmental services, but to the governmental process at large. A network such as the Treasury's Consolidated Data Network and its successor, the Treasury Communications System, could provide an evolutionary migration path to full implementation minimizing the incremental costs.

To fully implement joint electronic filing of federal, state, and local tax returns, all states and localities that levy income taxes should agree on an uniform wage code that would enable the use of electronic data interchange. Separate federal and state tax filings defeat the purpose of trying to eliminate duplication and make government more efficient. State and local information would similarly flow to a federal access point for data interchange of financial and employment information when required by any federal agency.

In order to make electronic filing more efficient, a digital signature standard that can stand on its technical merits in a judicial court challenge must be adopted.³ Presently, when citizens file returns electronically, they are typically required to sign and mail a paper certificate to the IRS to be matched with the electronic return.

To protect the privacy and confidentiality of individuals and corporations, a method of electronic verification, coupled with a privacy system that has the public's trust, must be employed. Without these safeguards, public fears concerning disclosure of information and governmental concern for data integrity would remain a problem.⁴

One possible scenario might be that a citizen uses an electronic government services kiosk or home personal computer to file tax return information with the IRS, including appropriate data the state and local governments may require. The data would be transmitted to an IRS service center to be processed, verified for accuracy, and then forwarded to the state, thus meeting the filing requirements of both entities in one step. This approach could be expanded to include the joint auditing of financial data and the joint collection of taxes—the genesis

of a virtual tax financial data agency for business and individuals.

Both small and large business alike could benefit from the reduction in the number of reports that have to be submitted to numerous federal agencies, state, and local governments. Simplified filing of business financial and employment data could benefit small business operators as desktop computers with communications capabilities are now in widespread use. Until the infrastructure is in place, state and local governments (or the Postal Service) could provide access service for small business reporting and taxpayer financial information filing.

2. Determine ways to eliminate the need for filing routine income tax returns. (2)

The President should issue a memorandum by January 1994, directing the Department of the Treasury to eliminate or reduce the need for filing routine income tax returns by January 1998.

The entire IRS filing process must be reengineered to be less paper-intensive. Most of the required financial information is already reported by business and financial institutions to the IRS. The IRS, not the taxpayer, should prepare or process the tax information. Taxpayers should only be required to file exceptions to the norm, e.g., unreported income or transactions, unusual deductions, etc. An annual closing statement could then be prepared and provided electronically to the taxpayer for review, validation, and acceptance or reconciliation. The primary emphasis would be on reconciliation before the fact rather than enforcement and penalties after the fact.

Taxpayers could access the IRS data files by kiosk or by home personal computer to confirm that tax computations are accurate. They could then settle their accounts electronically by either paying taxes due by a credit card or automated teller machine card or by directing the refund to a designated account using electronic funds transfer.⁵ At any time during the year, the taxpayer would have the ability to determine if withholdings

track with projected year-end tax obligations.

FISCAL IMPACT

The savings associated with this recommendation have not been quantified. Discussions relative to cost estimates of paper-based versus electronic transactions (EDI) suggest a ratio of 6:1.

IRS is presently in the midst of a major tax systems modernization project (TSM) and the associated investment costs are related to this recommendation. TSM, coupled with additional interagency reengineering is a major step towards the "reporting once" concept. Other related projects, such as IRS's "service to the citizen" initiative, will integrate interagency services into a seamless, cohesive financial based system. The financial needs of the intergovernmental enterprise, handled by EDI, will provide the basis for enormous savings through electronic transactions.

Each part of the information technology investment in financial reporting systems should show a significant return on investment such as IRS, Wage Reporting Simplification Project. Phase 1 of this

project identifies life cycle savings of \$1.7 billion to participating state and federal agencies and \$13.5 billion in reduced burden to private sector employers. These intergovernmental approaches are based on entrepreneurial "returns to innovation" that help facilitate the continuous improvement process—resulting in both overall cost savings and reduced burden to the public.

Cross References to Other NPR

Accompanying Reports

Department of the Treasury, TRE04: Foster Federal-State Cooperative Initiatives by the IRS; TRE05: Simplify Employer Wage Reporting; and TRE09: Modernize the IRS

Endnotes

1. U.S. Department of the Treasury, Internal Revenue Service, *Internal Revenue Service 1992 Annual Report*, Washington, D.C., 1993, pp. 3-4, 12.
2. The Mitre Corporation, *Wage Reporting Simplification Project: Overview of the Phase I Feasibility Study*, Washington, D.C., May 1993.
3. For further information see IT10: Develop Systems and Mechanisms to Ensure Privacy and Security.
4. Ibid.
5. Enabling legislation for federal agencies to accept electronic payments via credit or debit cards is currently included in H.R. 13, which was introduced January 5, 1993.

IT06: ESTABLISH AN INTERNATIONAL TRADE DATA SYSTEM

WE'VE GOT FRESH TROPICAL FRUIT

A local businessman operates a specialized market in selling fresh tropical fruits and vegetables that have an extremely short shelf life. His business was made possible thanks to the new international trade data system that eliminates duplicate import forms and allows speedy preclearance of international exports and imports.

BACKGROUND

The United States is competing in a global economy. The volume of goods traversing international borders continues to grow. Over 40 federal agencies collect, process, analyze, and disseminate vast amounts of international trade data to accomplish various trade-related governmental functions, which include the collection of duties and the enforcement of trade and contraband statutes. To accomplish its mission, the U.S. Customs Service developed and operates the Automated Commercial System (ACS). Today, this computer system collects complete trade data on 95 percent of all U.S. import transactions, facilitates the movement of goods by means of electronic

releases, and interacts with more than 1,500 trade participants.¹

Using ACS, Customs has established information-sharing capabilities with several agencies including the Fish and Wildlife Service, Food and Drug Administration, Internal Revenue Service, and Department of Transportation. Work is in process to develop data exchange capabilities with the Food Safety Inspection Service; Environmental Protection Agency; and Bureau of Alcohol, Tobacco, and Firearms. Additionally, data exchange capability exists with some foreign governments, such as Canada and Singapore, for trade statistics and visa verification. Canada, Mexico, and the United States are developing ways to develop uniform trade documentation and procedures among the three countries.

Trade data information requirements are growing. For example, in 1986, one ocean carrier began receiving bill of lading and manifest data electronically. In 1993, 76 carriers electronically supply ocean bills of lading for 80 percent of all ocean import tonnage. In 1984, brokers and importers represented 8 percent of all Customs data entries. In 1993, 1,324 brokers and importers provide 93 percent of the data entered into ACS. They use the system to obtain release of cargo, pay duties, update importer data, and many more functions. ACS maintains 855 million trade records.

On a daily basis, there are over 350 million requests for information, and 600,000 transactions are processed.²

The Office of the United States Trade Representative, Department of Commerce, International Trade Commission, and other agencies have access to a number of other trade databases to support the development of trade policy and the conduct of international trade negotiations. These have been maintained on computer facilities operated by the National Institutes of Health (NIH). However, NIH has advised these agencies that new computer facilities need to be located to support these databases. This presents an opportunity to revise and integrate these databases for governmentwide access.

The U.S. Customs Service and other trade agencies have implemented electronic systems to interface with the private sector for business transactions. However, two different information-sharing standards are now in use—the American National Standards Institute Accredited Standards Committee X.12 and the United Nations Electronic Data Interchange for Administration, Commerce, and Transport (UN/EDIFACT). The UN/EDIFACT standard is a compromise between the U.S. standard and the European Transportation standard.³ In late 1992, the American National Standards Institute voted to migrate to the EDIFACT standard by 1997.⁴ Close coordination of this migration effort among federal agencies is needed to facilitate electronic commerce and the development of interoperable computer systems.

NEED FOR CHANGE

A basic problem in today's trade environment is that various government agencies tend to develop costly systems and procedures on the basis of their individual needs for trade information. In many cases, individual agencies require duplicative reporting, resulting in enormous and unnecessary costs to those U.S. interests involved

in international trade. In addition, the approach to system standards within the government is fragmented.

Federal trade agencies and the private sector must have access to trade data rapidly and accurately not only to enforce compliance with existing laws and to account for revenues, but also to support U.S. efforts effectively in a global marketplace. The executive branch uses trade data in determining duty ratios, and Congress uses trade data to make trade policy determinations. Although ACS maintains 95 percent of current import data, there is not a similar reliable source of export information. The Office of the U.S. Trade Representative, for example, may have to go to 11 sources other than the U.S. Customs for necessary trade information. There is no single source of reliable, accessible trade data.

Without a single source, the same information is often entered on many different forms during many different processes. For example, one customs broker estimates that there are 14 different processes now required for an import transaction. The number of required processes depends on the type of goods coming into the United States.⁵ For some goods, multiple agencies must be notified and provide approval. Paperwork related to export shipments is also very costly to the private sector. It is estimated that for a single export shipment as many as 40 different paper documents may be required. The total cost of these documents is estimated at between \$150 and \$200 per transaction, or higher.⁶ A customs broker is responsible for the import transaction declaration on goods, which may be likened to a tax return being filed for all imports.

In addition to Customs documentation, other government agency regulations require the submission of forms for foreign trade transactions. The Fish and Wildlife Service, the Environmental Protection Agency, and the Department of Transportation, for example, require large volumes of forms. At one time it was estimated that in excess of 4 million trade-related documents are submit-

IT06: ESTABLISH AN INTERNATIONAL TRADE DATA SYSTEM

ted annually to government agencies other than Customs.⁷

Since the import and/or export data must be entered on each form, often manually, delays are frequent. The result can be missed delivery, spoiled goods, and lost windows of opportunity (especially when trading with other countries). These actions result in lost revenue both to U.S. businesses and the government.

Federal agencies must provide or make available selected trade information to partners of the United States. These partners include the trade community (brokers, importers, exporters), the transportation community (carriers, freight forwarders, couriers, the Bureau of Transportation Statistics), and foreign governments. Other major users of comprehensive trade data are the Trade Policy Committee and various congressional oversight committees.

Existing agency databases and computer systems are limited in their ability to integrate and disseminate trade data since none were designed to support such a broad community of interest. For example, limitations to ACS include difficulty in retrieving information, costly hardware expansion, and 10-year-old software programs that are difficult and expensive to maintain. Customs has established a Future Automated Commercial Environment Team (FACET) to address these shortcomings and chart a course for a future system.

An International Trade Data System, an expansion of the current U.S. Customs Service ACS, is needed to provide the following enhancements:

- more accurate and complete trade statistics and data,
- standardization of both import and export data collection,
- reduction of government and trade community processing time and costs,
- knowledge to promote informed compliance with trade statutes,
- elimination of duplication and unnecessary reporting,
- enhanced fraud detection capabilities,

- improved financial controls, and
- immediate access to trade data.

The existence of a reliable and easily accessible source of both import and export trade information would streamline the trading process, eliminate duplication and unnecessary reporting, and enhance American competitiveness in the international marketplace. All the trade data users will benefit from such a system; examples of its applications include the following.

- ACS is accessible via Treasury's Consolidated Data Network, which offers the potential of a single communications network to link the various law enforcement agencies responsible for guarding against money laundering, the export of controlled high technology, and the importation of narcotics, hazardous waste, and other contraband.
- With an electronic means of using export data in one country as import data to another and the corresponding rapid access of information, a Customs official could evaluate a shipment before its arrival at the border. Additionally, the system could provide information to analyze and reject risky cargo and accept non-risky cargo.⁸

ACTION

Develop and implement a U.S. Government International Trade Data System. (2)

By January 1994, the President should direct the U.S. Department of the Treasury to begin developing an International Trade Data System. The Treasury should seek technical support for the project from the United States Trade Representative; the International Trade Commission; the Departments of State, Labor, Agriculture, and Commerce; and other stakeholders. An implementation plan should be completed by January 1995, and submitted to the

Government Information Technology Services Working Group for approval.

This project would be accomplished by establishing an integrated database for the collection and dissemination of all international trade data through the expansion and redesign of the U.S. Customs Service Automated Commercial System. To implement the recommendation, Customs should expand FACET and make the team responsible for developing a system design for a commercial environment that will reflect the future needs of the U.S. government and the trade community.

The federal government must provide leadership to develop and pursue a coordinated national electronic data interchange (EDI) policy for interacting with domestic and international organizations. To date, there has been no U.S. effort to assess the political and business requirements for developing a comprehensive approach for the use of EDI. Migration to EDIFACT as a standard is now endorsed, although questions still exist regarding its management and use—particularly its relationship to other standards and responsiveness to regional and national concerns. As a part of its trade data system infrastructure, the federal government should provide proactive leadership in supporting worldwide EDI policy and standards. Specifically, it should

designate a single government entity as the EDI policy and coordinating body.

FISCAL IMPACT

A cost savings study has yet to be performed. Savings are anticipated through the elimination of duplicative data collection and reports, as well as enhanced financial controls. Additionally, the business community will benefit through a savings in time (and money) by a simplified trade process.

Cross References to Other NPR

Accompanying Reports

Department of the Treasury, TRE10: Modernize the U.S. Customs Service

Endnotes

1. U.S. Department of the Treasury, Customs Service, "Automated Commercial System Fact Sheet," February 1993, p. 1.
2. *ibid.*, p. 3.
3. UN/EDIFACT, *Introduction to UN/EDIFACT* (April 1991.)
4. See ASC X12 EDIFACT Alignment Task Group, "EDIFACT Alignment Ballot Results," June 29, 1993.
5. Telephone interview with the Chief Executive Officers of the Fritz Company, New York, July 1993.
6. Lavery, Hank, "Crossing the Ocean of Paperwork," *Global Trade and Transportation*, vol. 113, no. 4 (April 1993), pp. 31-32.
7. Telephone interview with FACET Study Group, U.S. Customs Service, Washington, D.C., August 25, 1993.
8. *Ibid.*

IT07: CREATE A NATIONAL ENVIRONMENTAL DATA INDEX

FINDING OUT WHICH WAY THE WIND BLOWS (AND THE RAIN FALLS, AND THE EARTH QUAKES)

A prospective homebuyer is looking for a location for her home. She goes to an information kiosk at her library, where she gets a printout of statistical probabilities of floods, earthquakes, and major storms in various geographic areas. She is particularly pleased to note the information provided about relative heat, humidity, and pollen counts, since she suffers from various allergies.

BACKGROUND

Environmental data and related information are created by several federal agencies. For example, the Department of the Interior has databases developed from biological surveys; the Environmental Protection Agency collects information through the Environmental Monitoring and Assessment Program; the National Aeronautics and Space Administration collects satellite data; and the National Oceanic and Atmospheric Administration (NOAA) collects vast quantities of oceanographic, atmospheric, and geophysical data. The data collected from these various systems are usually acquired for

a particular purpose, but frequently have multiple uses, such as the use of weather data to investigate global climate change.

Innovative use of this available environmental data through integrated data analysis and interpretation can be facilitated by knowing what information is available and the source. There are many potential government and nongovernment users of these databases in addition to the agency collecting the data. Among these users are the general public, the business community, the international scientific community, and researchers and government policymakers concerned about the global environment.

The nation's investment in environmental data collection is very high. For example, NOAA spends approximately \$350 million a year to support its satellite observing systems.¹ Similar high-dollar amounts are invested in the satellite observing systems of other agencies, as well as those on the ground and at sea.

NEED FOR CHANGE

In spite of the amount of dollars invested in the observing systems, it is difficult for a user to find out what data exist, where they are located, and how to gain access. For example, ocean temperature data are critical to the study of climate, but there is no cen-

tral focal point where researchers can determine where the primary data are located and where related data reside for correlation. At least 4 agencies and 10 data centers are involved in holding and archiving environmental data.² One report concluded: "Scientists face major obstacles in finding out what data are available."³ Additionally, most data have been collected without the benefit of data standards and existing data may be of poor or unknown quality.⁴ NOAA is the major holder of federal environmental data. Its weather satellites, for example, have collected over 150 terabytes (150,000,000,000,000) of data.⁵

Since most agencies are currently developing separate indexes of their data holdings, integrating the information into a common index of systems should avoid duplication and not be difficult. This common index would provide a comprehensive mechanism to integrate the individual agency data holdings into a cohesive system in the future. By using electronic data interchange, users requiring the data would benefit from easy location and access to the data. The index would allow citizens, industry, and academia to locate and access needed information.

The creation of a unified environmental data index—an environmental data "yellow pages"—will result in substantial progress toward making environmental data acquired by the government available to the many users that require or desire the data.

ACTION

Organize the implementation of a National Environmental Data Index. (2)

By January 1994, the President should direct NOAA to organize the implementation of a National Environmental Data Index. An implementation plan, including the establishment of data standards, should be completed by July 1994. This plan should recognize environmental data as a public resource to be shared and not treated restrictively as the property of the scientific

community. The plan should address the frequency and method of updating the data index.

NOAA should coordinate closely with the Environmental Protection Agency, NASA, and the Departments of Energy, Defense, Interior, and Agriculture to ensure unity of purpose. To implement the index, each agency should provide descriptions of their databases to NOAA. These descriptions should include items such as type of data held, geographical area, data elements available, access arrangements including methods for automating access.

The first phase in implementing this index is to coordinate the development and use of environmental data gathered by government agencies. The second phase will be to coordinate the indexing of non-federal and international environmental data.

FISCAL IMPACT

Upgrading of existing telecommunication systems will cost money, but until an implementation plan is fully developed, the total cost cannot be determined. Most agencies are already building agency-specific data directories or indexes. This recommendation mandates that the implementation of data systems be done in a new, cooperative way, and that cross-agency coordination does occur. The creation of a nationwide index will be a simple first step toward further agency cooperation.

Endnotes

1. Telephone interview with T. McGunigall, Program Manager, Geostationary Operational Environmental Satellite and Polar Satellite Systems, NOAA Systems Program, August 17, 1993.
2. Telephone interview with W. Turnbull, Executive Officer, Environmental Information Services, National Environmental Satellite Data Information Service, NOAA, August 17, 1993.
3. National Research Council, Committee on Geophysical Data and Committee on Geosciences, Environment and Resources, *Solving the Global Change Puzzle: A U.S. Strategy for Managing Data and Information* (Washington, D.C.: National Academy Press, 1991), p. 24.
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IT08: PLAN, DEMONSTRATE, AND PROVIDE GOVERNMENTWIDE ELECTRONIC MAIL

FASTER THAN A SPEEDING BULLET(IN)

A citizen walks into a government office for job counseling and information on training programs. Unfortunately, the local counselor is not familiar with this particular job category. He sends an e-mail message to an expert at the regional office. A few minutes later, the counselor is sharing a detailed reply from this expert with the jobseeker. In fact, he gives her an e-mail address she can use to continue to communicate with the expert from her home computer.

BACKGROUND

In 1969, the Advanced Research Projects Agency Network (Arpanet) was created so that researchers at universities and other facilities might share data and computational resources.¹ Soon these scientists developed ways to use the network to transmit messages, known today as electronic mail or "e-mail." Universities and regional networks then connected their own systems to Arpanet creating the Internet. Today, this cooperative network of networks links millions of computers throughout the

world. Moreover, e-mail on the Internet and other networks has become an important tool for industry and a growing market driver for commercial networks and software suppliers.

E-mail has many applications. It provides rapid communications among individuals or groups. Workers in an organization, within a building or throughout the world, can use e-mail over local area networks, telephone lines, or specialized data networks such as Internet for easy, rapid interaction. The delays and frustrations of "telephone tag" disappear, and many people can simultaneously interact. In effect, workers can assemble and interact as teams without concern for location.

E-mail permits easy access across agencies and bureaucratic boundaries. As such, it breaks down barriers to information sharing. This can be as important within an agency as across agency boundaries. Barriers to vertical communications are lowered by removing hierarchical controls to communications.

E-mail can also minimize the need for personnel transfers or expensive temporary assignments. For example, 53 engineers at Digital Equipment Corporation (DEC)—spread across Massachusetts, Arizona, Colorado, Singapore, and Germany—collaborated on a design project but had

never met and had talked on the phone rarely. DEC estimates that this group finished its project one year sooner, and needed 40 percent fewer people than a team assembled in one building.² E-mail is also cost effective. According to Hewlett-Packard's calculations, a two-page electronic mail message between any two HP employees worldwide cost on average \$0.22; a letter \$0.51, and a fax \$1.66.³ And E-mail is faster than all other methods, especially when more than one addressee is included.

The infrastructure needed for supporting e-mail is widely in place in universities and research establishments; most agencies that do business with universities—notably those supporting research and education—are major users. Agencies with e-mail capability use it for rapid interaction with the public. Some have incorporated e-mail into processes for grant and contract proposal reviews, saving the time and expense of conventional mail for receipt of comments from expert reviewers of proposals.

Using e-mail, agencies working jointly on national research initiatives, such as the High Performance Computing and Communications Program and the U.S. Global Change Research Program, "meet" and exchange information needed to manage complex cooperative programs. As the infrastructure, personal computers, user-friendly software, and telephone-based access have grown, some agencies have opened facilities for general interaction with the public.

NEED FOR CHANGE

Presently, over a dozen agencies, and (experimentally) the White House and parts of both Houses of Congress are "on-line." Ultimately, most federal employees should be reachable by e-mail. However, much work needs to be done before this can happen. Issues of standards and compatibility must be resolved. Additionally, many agencies desire applications that are still not fully developed such as file transfers and

multimedia mail. Many agencies have electronic mail, but few make it available throughout an agency or use it to maximum advantage. The federal government as a whole has an often incompatible mix of systems. As the utility of linking internal systems together to conduct agency business became apparent (and linking agency internal systems with more global systems), several ad hoc interagency groups were formed to examine various problems related to implementation. However, none of these groups has the authoritative charters to accomplish the myriad tasks that must be completed to optimize e-mail use.

In addition, several potential barriers of "traditional practice" must be dealt with. The most difficult is a lack of understanding about the various potential uses of e-mail. In addition, messages created in the e-mail environment are treated by senders and receivers in much the same way as telephone conversations—privileged personal communications. But messages, unlike telephone calls, are inherently archival, which introduces records management, security, and privacy concerns. The Federal Records Act (FRA) requires that agencies document work that is used to transact official business—regardless of the medium. Because official agency business will be conducted over electronic mail systems, agencies must take steps to ensure that the recordkeeping requirements of the FRA are met.

Guidance for agencies in meeting this requirement is not adequate and should be strengthened and extended to reflect changes in records management, privacy, and computer security.

ACTIONS

1. Improve electronic mail and messaging among federal agencies. (2)

An existing interagency task force established by the Office of Management

and Budget's Office of Information and Regulatory Affairs (OIRA) should be charged to report by April 1994. The Department of Health and Human Services presently chairs this interagency working group, the E-mail Task Force, supported by the General Services Administration. As authorized by the Paperwork Reduction Act, OIRA is overseeing the task force's work and coordinating it with other initiatives. The task force is drawing expertise from existing interagency information technology groups such as the Federal Information Resources Management Policy Council, the FTS2000 Interagency Management Council, and the High Performance Computing, Communications, and Information Technology Subcommittee of the Federal Coordinating Council for Science, Engineering, and Technology. Four goals for this group include:

- Identify support for, provide advice to, and evaluate the results of e-mail pilot programs currently underway. These pilot programs should establish electronic mail capabilities among departmental science and technology advisors and the White House Office of Science, and Technology Policy, departmental legislative affairs offices and the Legislative Liaison Office, and among parties in the alternative dispute resolution process of the Administrative Conference of the United States.
- Develop and issue a Request for Information to the private sector. The Request for Information will outline the challenges faced by the federal government in its progress toward electronic mail interconnection and solicit possible technical solutions. The task force will evaluate industry responses and use this information to fulfill its other goals.

- Analyze the current use of Internet by federal agencies and its potential contribution to both near and long-term e-mail requirements. Coordinate proposals for improving mail interoperability with the High Performance Computing and Communications Initiative via the High Performance Computing, Communications, and Information Technology Subcommittee of the Federal Coordinating Council for Science, Engineering, and Technology.
- Develop a near-term program plan, including financial and technical resource requirements, to assist agencies in improving their capabilities for electronic mail.

2. Issue a governmentwide e-mail records management policy. (1)

In consultation with OMB, agencies, and the National Archives, and Records Administration (NARA) should issue a governmentwide e-mail records management policy by March 1994. Some issues that NARA should consider in revising its policy should include records management, privacy, security, and permissible use.

FISCAL IMPACT

Fiscal implications cannot be determined until the E-Mail Task Force has reported to OMB. There will be significant costs associated with upgrading computer hardware and software.

Endnotes

1. Arpanet was established by the Advanced Research Projects Agency of the Department of Defense.
2. Perry, Tekla S., and John A. Adam, "E-mail: Pervasive and Persuasive," *IEEE Spectrum* (October 1992), p. 24.
3. *Ibid.*, p. 26

ESTABLISH SUPPORT MECHANISMS FOR ELECTRONIC GOVERNMENT



INTRODUCTION



Electronic government requires an information infrastructure. This infrastructure consists of the technologies needed to allow information to flow smoothly, as well as the operational policies, procedures, and standards that support electronic government applications.

An effective government information infrastructure will lead to complementary and cooperative interagency programs and an integration of databases among these programs. Therefore, privacy and security issues have the greatest priority. The public requires assurance that controls exist to guarantee the integrity, security, and privacy of the information the government maintains.

The government needs to improve the way it buys information technology (IT). Additional Accompanying Reports of the National Performance Review, entitled *Reinventing Federal Procurement* and *Reinventing Support Services* contain specific recommendations on improving IT acquisition.

The initiatives in this section of the report require the support and backing of federal,

state, and local government as well as industry. Incentives are needed to reward federal managers and private sector contractors for innovations that result in successful reengineering programs.

Although the recommended actions in this report offer potential savings in the billions of dollars, there will be some initial start-up costs for innovative interagency projects. Certain measures can be taken to finance pilot programs. These include creating a governmentwide venture capital fund, initially seeded by taking a small percentage from existing agency IT budgets to avoid the need for new spending appropriations; multiyear funding of IT programs; and retaining savings from IT projects for reinvestment in new IT initiatives.

A key element in realizing the vision of an electronic government is government's approach to improving human resources for IT management and use. Keeping pace with the service demands of citizens and the advances in technology requires a full-scale shift from minimal training to continual strategic learning.

IT09: ESTABLISH AN INFORMATION INFRASTRUCTURE

RIDING ON THE INFORMATION HIGHWAYS

A research scientist at the Center for Disease Control and Prevention has discovered an unidentified strain of bacteria. She broadcasts her discovery over the common national information infrastructure. A specialist in tropical diseases reads the message and responds with the possible sources of the bacteria and treatment for anyone affected. A widespread outbreak of an infectious disease is avoided.

BACKGROUND

The vision of an electronic government requires computer hardware, software, and telecommunications equipment to make data flow smoothly across the nation's information highways. It also requires policies, procedures, and standards to support the development and operations of services that use the physical technology components. Practices and standards, for example, ensure that newly acquired hardware and software are compatible with existing equipment and interoperable with other systems to which they must be linked. Privacy and security practices, methods, and standards ensure

adequate user protection and systems integrity.

An effective information infrastructure requires high levels of interoperation and integration among diverse users. For example, a large enterprise might require high-capacity, high-performance, and expensive technology, such as a fiber optic line leased from the phone company at a cost of several thousand dollars per month. An individual, on the other hand, could link to the same information infrastructure—at lower capacity, lower performance, and lower cost—via a residential telephone and a modem for a minimum access charge. Technical requirements are based on the amount of information transmitted.

The computer and communications industry is in a period of rapid technological innovation producing a continuous revolution in information processing capabilities and products. Notable among these are (1) vast improvements in the ratio of price to performance in integrated circuit design and manufacturing; (2) improvements in user-friendliness and the automation of complex procedures; (3) enhanced interoperability among multi-vendor systems; and (4) universal access to computer networks by both wireless and land-line connections. At the same time, the telecommunications industry is creating new integrated voice and data communications networks. These net-

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works will provide the critical underlying structure for rapidly accessing and receiving information from assorted sources, rapidly coordinating actions, and sharing resources across diverse, geographically distributed organizations.

Elements of a nationwide information infrastructure are already being incorporated into baseline federal, state, and local government operations, based on capabilities provided by the private sector. The federal government has contracts in place to take advantage of existing telecommunications infrastructure for voice, video, and some data communications services. The standard vehicles for agencies to acquire these services are the FTS2000 contracts awarded to AT&T and Sprint by the General Services Administration (GSA) in 1988. FTS2000 provides the basic intercity telecommunications infrastructure for the federal government. The various services available under the present contract make it possible for a given agency to craft its own network services based on its own requirements.

In addition, Internet is a basic data communications infrastructure for (computer-based) communications for some federal agencies and much of the rest of the nation and the world. Today, this cooperative "network of networks" links millions of computers throughout the world providing the framework for an information highway. Over 17,000 networks are linked in 102 countries, and many of these networks contain thousands of computers.¹

Internet makes possible collaboration and resource sharing among millions of government workers, academics, educators, researchers, and a growing list of commercial organizations and services. Nearly half of the presently attached networks are nonacademic in nature. It is a rapidly evolving testbed for new information-based services. Private citizens and business can gain access to Internet for a monthly fee. The Internet is a common ground for linking governmental, academic, and commercial networks for electronic mail. All of the major commercial on-line information and

electronic mail services (Prodigy, CompuServe, MCI, and AT&T) provide gateways to Internet. Major segments of the U.S. component of Internet are funded by the Department of Defense (DOD), National Science Foundation (NSF), Department of Energy (DOE), National Aeronautics and Space Administration (NASA) and other agencies that are involved with research and development programs.

Federal agencies such as DOD, DOE, Department of Commerce (DOC), and NASA are in the process of transitioning their scientific and technical information (STI) programs from paper-based operations to electronic digital libraries. These electronic digital libraries will contain vast quantities of agency-generated STI which can be accessed over the National Information Infrastructure (NII). Test-bed electronic libraries of STI are currently being developed using wide area information servers, graphical user interfaces, and Internet connections. Common policies and standards regarding federal STI will be essential in simplifying the use of these databases and in providing one-stop shopping for NII users.

Recent federal initiatives improving access to government information in electronic form—e.g., Office of Management and Budget (OMB) Circular A-130 and the Government Printing Office Electronic Information Access Enhancement Act of 1993—will accelerate the need for electronic connections to the outside world for most agencies and Congress. A wide variety of access methods will need to be supported, including connection to publicly available communications networks, such as Internet, Prodigy, and CompuServe, as well as dial-up access to government-sponsored bulletin boards. Agencies must ensure that their formats for information storage and linkages for interconnection are compatible with these access methods.

Telecommuting is a potentially important application of the infrastructure. Concepts include working from home, or from facilities located at the outer edge of large metropolitan areas, dividing time between a

regular office and a remote workplace, and combinations that involve using remote or roving workplaces.² Recent action by Congress directs GSA to facilitate the development of three pilot federal telecommuting centers in Maryland and Virginia.³ Telecommunications to the base office will require high-speed data links for workflow and videoconferencing to promote office interactions, training, and business meetings. These inter-workplace telecommunications facilities will merge with the evolving Government Information Infrastructure (GII) and the more widespread NII, thus blurring the workplace/home distinction.

State and local governments are moving forward on their own plans to use advanced telecommunication systems. An example of one approach is the Iowa Communications Network. It is envisioned as an advanced information network providing voice, data, and video information services to state and local agencies, libraries, local schools, community colleges, and universities within Iowa. The state has been coordinating its efforts with GSA, the Department of the Treasury, the Department of Veterans Affairs, and the U.S. Postal Service to investigate how such a comprehensive network could be used to integrate the delivery of federal and state government services.⁴ California, North Carolina, and Texas all have major initiatives underway with local telecommunications carriers.

The GII strategy will be refined and improved in the future as the national strategy, vision, policies, and technology for the NII emerges. The government needs to take action to ensure the compatibility of intergovernmental systems with this evolving infrastructure.

NEED FOR CHANGE

The underlying technologies for the information infrastructure are evolving rapidly, and no one can accurately predict the technology of choice for the year 2000.

The government must develop a coherent information infrastructure to evolve with technology and support electronic government. A cross-government coordinated plan for infrastructure deployment is needed to reduce duplication, system redundancy, and costs.⁵ Significant opportunities exist for sharing existing data and computing resources, reengineering delivery of government services, improving the quality of service, and decreasing costs. No single data center or single communications network can serve all government information needs. The flexibility afforded by high-capability networking and new computing technologies can, however, offer significant opportunities for cost savings by facility sharing and "rightsizing" of local systems.

The government must position itself to take advantage of the evolving infrastructure by taking steps today to coordinate its existing "components" of infrastructure—e.g., data processing centers and basic function applications.

ACTIONS

1. Develop a Government Information Infrastructure (GII) to effectively use government information resources and support electronic government applications. (2)

The Information Infrastructure Task Force (IITF) should coordinate the development of a GII that implements the strategic vision and policy directions of the Information Infrastructure Task Force.⁶ The GII should be pursued as a joint partnership between government, national laboratories, and universities on the one hand, and the nation's information technology industry on the other; and in coordination with the nation's broader research and development initiatives (e.g., the NII initiative and the federal High Performance Computing and Communications Program). The GII should make use of the emerging NII deployed primarily by American industry.

The Interagency Management Council—chaired by the Associate Administrator of the GSA for FTS2000 with membership including senior information resources managers of various government agencies—is currently planning for the future replacement of the FTS2000 contracts. This planning effort should include the transport requirements for the GII to ensure the replacement to FTS2000 is supportive of the development of the GII.

A key role that government can play is to require greater interoperability among government systems. This can be facilitated by focusing the FTS2000 replacement and individual agency procurement requirements on systems that can interoperate, by working with industry to explore partnering opportunities, by promoting standards, and by identifying and removing regulatory barriers that may hinder development of the NII.

2. Consolidate and modernize government data processing centers. (2)

The President, by January 1994, should direct the GITS Working Group to develop a governmentwide data processing modernization plan by October 1994. The plan should complement the working group's strategic information technology vision for government resources and provide a roadmap for reducing the number of data processing centers within 2 years of the plan's approval. OMB should review the plan to ensure that these targets are met, and should require special justification of new requirements for stand-alone data processing installations.

OMB, in cooperation with the GITS Working Group, should update and review the plan annually from a cross-government perspective in conjunction with agency budget submissions. Additional opportunities for consolidation and downsizing should be proposed by the working group and incorporated into annual government data processing modernization plans. For example, DOD developed a consolidation and

modernization plan—now being executed—that will consolidate over 100 data processing installations into 16 efficient centers.

3. Reengineer basic systems for improved delivery of government services. (2)

The GITS Working Group, by October 1994, in cooperation with OMB, should develop a governmentwide plan addressing basic functions and services to be reengineered, both within and across agencies.⁷ The plan should also include plans for interoperability among basic administrative functions such as payroll, personnel recordkeeping, management information systems, and financial and general ledger accounting.

An example of reengineering would be to have current agencies continue to set policies for specific benefits programs, with one agency handling administration and coordination of integrated benefits delivery. Another example of reengineering which will reduce cycle time, steps and pieces of paper handled is incorporating use of automation based geographic information systems (GIS) data, such as streets, property boundaries, parks, and police reporting districts into revised workflows and processes. The City of Minneapolis saved approximately \$40 million in street design costs through integration of GIS into its design process.⁸ The City of Phoenix is extending its GIS based access to property records data from one department where savings of over \$100,000 in recurring costs are expected, to all departments and customers.⁹ These revised process flows will yield increased service, additional savings and opportunities for cost recovery.

Reengineering will also allow many government administrative support services to be streamlined. These services presently include systems for payroll, personnel recordkeeping, grants, loans, procurement, project management, management information systems, budget and financial accounting. Smaller administrative systems, such as

correspondence control, audit tracking, and legislative information systems should also be addressed. OMB should prioritize the phased consolidation and standardization of selected integrated systems for government-wide use.

OMB, in cooperation with the GITS Working Group, should update and review the plan annually from a cross-government perspective in conjunction with agency budget submissions.

4. Consolidate and integrate federal government private networks. (2)

The GITS Working Group should compile an inventory of private telecommunications networks currently in use within the federal government by October 1994. The working group should evaluate this inventory to identify opportunities for consolidating, sharing, and interconnecting network resources among government agencies.

FISCAL IMPACT

The Department of Defense (DOD) developed a set of estimates, based upon industry benchmarking, that were adapted to reflect government complexity, size and security factors. Savings are primarily from consolidation and standardization activities. Reengineering efforts will yield additional savings.

The following infrastructure component areas, which comprise the 30 percent savings identified and being realized by DOD could be extrapolated to civilian agencies across government and would probably yield similar savings:

- data processing installations
- communications
- central design activities
- information technology acquisition
- standards
- security
- education and training

Budget Authority (BA) and Outlays (Dollars in Millions)

	Fiscal Year					Total
	1995	1996	1997	1998	1999	
BA	0.0	-444.0	-862.5	-1,365.0	-1,646.5	-4,381.0
Outlays	0.0	-444.0	-862.5	-1,365.0	-1,646.5	-4,381.0
Change in FTEs	cbe	cbe	cbe	cbe	cbe	cbe

Cross References to Other NPR

Accompanying Reports

Department of the Interior, DOI03: Establish a National Spatial Data Infrastructure

Reinventing Human Resources Management, HRM07: Enhance Programs to Provide Family Friendly Workplaces

Department of Transportation, DOT13: Create and Evaluate Telecommuting Programs and DOT14: Improve DOT Information Technology Management

Endnotes

1. Broad, William J., "Doing Science on the Network: A Long Way from Gutenberg," *The New York Times* (May 18, 1993), p. C1.
2. U.S. Department of Transportation, "Transportation

Implications of Telecommuting," April 1993.

3. Public Law 102-393.

4. Interagency Information Resources Management Infrastructure Task Group, "Iowa Communications Network Study," April 1, 1993, pp. 1-2.

5. A recommendation for securing this plan was described in the Leadership section of this report.

6. See IT01: Provide Clear, Strong Leadership to Integrate Information Technology Into the Business of Government.

7. For additional information on this subject see Thomas A. Stewart, "Reengineering: The Hot New Management Tool," *Fortune*, vol. 128, no. 4 (August 23, 1993), pp. 41-48.

8. Telephone interview with Brad Henry, Engineer, City of Minneapolis, August 17, 1993.

9. City of Phoenix, "Geographic Information System Implementation Plan," October 26, 1992.

IT10: DEVELOP SYSTEMS AND MECHANISMS TO ENSURE PRIVACY AND SECURITY

BUSINESS RELIES ON SECURE COMMUNICATIONS

A businesswoman walks into a post office, presents a picture ID, and is given a "public key." Using this key card, she electronically signs a federal contract and transmits it over the National Information Infrastructure to a contracting agency. The transaction is valid, secure, and paperless.

BACKGROUND

Automated teller machines (ATMs) are one of the most successful examples of using information technology to improve service. Viewed with skepticism at their initial introduction, they are now the principal means used to conduct routine banking transactions. Fundamental to their success is public confidence in the trustworthiness of the electronic banking system. Indeed, the principal anxiety associated with ATMs is the fear of being robbed while making a withdrawal. Recent instances of a new type of crime, a high tech mugging, have occurred using ATMs. Personal and access information have been stolen and used to make unauthorized withdrawals.

In a recent Brooklyn, NY case, crooks used a hidden video camera to look over the shoulder of people withdrawing money at ATMs. The camera recorded their personal identification numbers (PINs) and later matched them with discarded receipts to make unauthorized withdrawals.

In another ATM caper, a bogus ATM machine was placed in a Connecticut mall. The bogus machine not only recorded hundreds of PINs, it also read the private account information stored on each ATM card. The bogus ATM machine returned cards to the unsuspecting owner and displayed a message indicating that the transaction could not be completed. These criminals later used the information to withdraw money. In both of these crimes, the crooks succeeded in stealing over \$100,000.

These cases illustrate real money loss by exploiting system security vulnerabilities. However, they also illustrate the real potential for losing public confidence in electronic government.¹

Unless the information systems and electronic services delivery systems protect the information being processed and the privacy of the individuals using them, electronic government will not work. Government is beginning to use the recent advances in information technology to lower costs; increase efficiency and productivity; and collect, use, and analyze far more information much of it personal.

ESTABLISH SUPPORT MECHANISMS FOR ELECTRONIC GOVERNMENT

As electronic services and information systems in the government increase and have more widespread use, government and citizens will demand continued confidentiality and integrity in the information processed. Also, as government, businesses, and other organizations rely more on electronic records and information, they will also demand more access to diverse, interconnected databases. Information technology can provide tremendous benefits in improved service and, used properly, enhanced privacy and security. But without proper attention, it can also permit inappropriate, unauthorized, or illegal access to information.

Furthermore, new electronic government applications—particularly those focused on service to the citizen programs, present non-traditional accuracy, authentication, privacy, and security challenges and vulnerabilities. These challenges and vulnerabilities are both technical and policy related.²

Although overcoming the technical challenges is straightforward, a tradeoff must be made between cost and risk. Information technology-based solutions and prototypes (cryptography, digital signatures, security protocols) for protecting distributed inter-networked systems will soon be available. The implementation of these solutions should be weighed against all identifiable risks.

Overcoming the political and policy challenges, however, is not straightforward. Prominent among these today is the appropriate role of the federal government in privacy and security. Examples of particularly challenging policy issues include balancing national security interests with private sector business interests, and maintaining a balance between individual privacy and governmental efficiency.

The American people want trusted, highly available information, and computer systems that are user-friendly, secure, and protect individual privacy. These systems must

- safeguard information, facilities, information systems, and networks against illegal or unauthorized access, modification, or disclosure;

- balance access to information and records among government record-keeping agencies with appropriate privacy controls;
- respect private ownership of information and enable policies and disclosure procedures for government use of individual information; and
- incorporate privacy and security safeguards early in the design of the system.

Finally, as the nation develops information highways and expands the national information infrastructure, it should be designed and used within a framework that

- protects national security interests,
- permits legitimate law enforcement activities,
- enhances global competitiveness and productivity for U.S. business and industry, and
- ensures the privacy and civil liberties of all citizens.

NEED FOR CHANGE

Public acceptance and reliance on electronic information and data requires

- striking the proper balance between an individual's personal privacy and the government's need for information,
- providing a high degree of security against unauthorized access or use, and
- maintaining the accuracy of the information stored or processed.

Need for Privacy. Americans are becoming increasingly concerned about threats to their personal privacy resulting from wider use of information technology to collect, maintain, and manipulate personal information. A poll conducted in 1970 showed that only 33 percent of respondents were concerned about personal privacy.³ By 1990 polls, that proportion had risen to 79 percent.⁴

Although advancing technology can create new opportunities for misuse, the real problem lies in the lack of adequate management controls over those with access to personal records. For example, in a recently well publicized case, the U.S. Attorneys announced the arrest of over two dozen individuals who engaged in schemes to buy and sell information from Social Security Administration (SSA) computer files.⁵ Most of those arrested were current or former employees of the SSA or the Department of Health and Human Services' Office of Inspector General. This case brought to the public's attention the fact that SSA employees in over 1,300 offices all across the country have unrestricted access to over 130 million records on working Americans. In another case HHS's Inspector General found Social Security Number fraud.⁶ An SSA employee had used social security numbers queried from the SSA records to obtain and establish credit.

Giving increased attention to personal privacy policies and procedures would allow the federal government to better represent American business interests abroad, particularly in Europe where privacy protection approaches differ from U.S. approaches.⁷ Information, and the records associated with this information, is a global commodity, which readily flows between international borders. Trade conflicts and issues may arise for U.S. businesses when dealing with the privacy laws of other countries such as the restrictions implied by recent privacy laws advocated within the European Community for transborder flow of information.

Need for Security. As society becomes more dependent on computers and computer communications systems for the conduct of business, government, and personal matters, it becomes more reliant on the availability, confidentiality, and integrity of the information these systems process. Information security has become especially important for applications such as electronic transactions where accuracy, authentication, or secrecy are essential.

OMB estimates that by 2000 approximately 75 percent of public transactions will be processed electronically.⁸ The private sector already uses electronic transactions widely. One trillion dollars in worldwide banking and financial transactions occurs each day.⁹ Yet the best security systems in use today lose money, credit and financial reports, and private and proprietary data due to electronically perpetrated theft and browsing. For example, in the U.S., computer crime losses alone total \$15 billion per year.¹⁰ These losses are minor when compared to potential losses from harmful and illegal acts such as service disruption, terrorism, and industrial espionage. The cost could be billions for a single debilitating disruption of service or criminal act.

More than dollar losses are at stake. In distributed, electronically based information systems, if access controls and security concerns are not addressed as government proceeds with reinvention, vulnerabilities to U.S. national security may be inadvertently created by making information readily available to foreign governments, competitors, or criminals.¹¹ Finally, large-scale service disruptions could adversely affect recipients of federal benefits and information-based services of all kinds.

ACTIONS

A division between sensitive unclassified and classified information is statutorily mandated by the 1987 Computer Security Act. The actions use existing privacy and security boards, councils, and groups. Exceptions are two near-term task forces to develop high priority, essential standards or generally acceptable principles needed for rapid progress in creating an electronic government.

1. Establish a Privacy Protection Board. (3)

The President should establish an independent Privacy Protection Board within the executive branch. Among the stakeholders, consensus exists on the need

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for such a board, but not on key implementation issues such as membership, authority, powers, duties (including budget and legislative relationships), and staff size. By January 1994, the President should direct the Information Infrastructure Task Force (IITF) to empanel a 12-month Privacy Study Council to advise him on these issues associated with establishing the Privacy Board and to prepare enabling legislation to create a Board. The Council should work closely with the IITF, which was created to address federal information policy and telecommunications policy issues.

2. Establish uniform privacy protection practices and generally acceptable implementation methods for these practices. (2)

The President, by March 1994, should direct the creation of an interagency task force under the auspices of OMB to create uniform privacy protection practices for information systems and generally acceptable implementation methods for these practices. The task force should include: (1) membership from the Departments of Justice, Treasury, Commerce, Defense, Energy, Health and Human Services, Education, and State, OMB and the Office of Science and Technology Policy; (2) representation from the Privacy Study Council; and (3) participation and input from groups such as business, consumer, computer science, telecommunications, civil liberties, and state and local governments.

OMB should have a coordination and advisory role, and the chair should be selected from the participating federal agencies. The task force should be directed to prepare a report within 12 months following its creation that details uniform privacy protection practices and provides generally acceptable implementation methods for these practices. Methods for implementing the uniform privacy protection practices may differ by sector, e.g., health care, personnel, or law enforcement. These practices and methods should be viewed as the

recommended privacy standards federal agencies will follow and the private sector will consider.

The direction to the task force should require that the generally acceptable implementation methods aggressively use information technology—including the use of distributed interconnected systems—and should effectively use technology to balance government's responsibility to provide individuals a reasonable degree of control of information about themselves and appropriate confidentiality with government's desire for efficient and high-quality recordkeeping; detection and prevention of fraud, waste, and abuse; and effective law enforcement investigations.

The President should further direct OMB to issue new guidance (e.g., a circular), within six months of receiving the task force's final report. This guidance will adopt, for use governmentwide, uniform privacy protection standards and generally acceptable implementation methods as set forth in that report.

3. Develop standard encryption capabilities and digital signatures for sensitive, unclassified data. (2)

The National Institute of Standards and Technology (NIST), in coordination with OMB and with technical assistance from the National Security Agency (NSA), should issue a final digital signature standard by January 1994. NIST, in coordination with OMB and with technical assistance from NSA, should also create opportunities for industry to develop the encryption capabilities required for protection of networked distributed systems. NIST should then make that information available to federal managers. A high priority should also be given to finalizing and promulgating digital encryption standards and security protocol standards.

4. Develop generally accepted principles and practices for information security. (2)

NIST, in coordination with OMB and with technical assistance from NSA should plan and coordinate the development of generally accepted principles and practices for information security which are to be applied in the use, protection, and design of government information and data systems, particularly front-line systems for electronically delivering service to citizens. Draft guidance should be issued by April 1994. More than one set of generally accepted principles and practices may be required for the affectable communities.

5. Develop a national crisis response clearinghouse. (2)

By April 1994, NIST, in coordination with OMB and with technical assistance from NSA, should promulgate better security information to the existing group of agency crisis response teams. This clearinghouse should address security problems including collection, analysis, and technical vulnerability assessment. It would also disseminate information about incidents governmentwide. The mission of this clearinghouse would be to serve as a broker of computer security crisis information and of computer security resources. This can be accomplished by expanding the role of the NIST program and by formalizing Memoranda of Agreement that facilitate networking and coordination among various existing independent, crisis response bodies.

6. Emphasize need for information security in sensitive unclassified systems. (2)

OMB and NIST, with technical assistance from NSA, should (1) improve planning capabilities for security by requiring an information security plan to be part of each agency's strategic IT plan; (2) identify computer security as a material weakness in the Federal Managers Financial Integrity Act report if it does not meet established thresholds; (3) require employees and contractors to complete awareness and training; (4) improve planning for contingencies;

and (5) establish and employ formal contingency response capabilities. These requirements should be included in future revisions to OMB Circular No. A-130, *Management of Federal Information Resources*, to be issued no later than October 1994.

7. Reevaluate security practices related to national security data. (2)

By October 1994, the PRD Task Force—chaired by the Information Security Oversight Office, in cooperation with the Joint Security Commission, and the National Advisory Group for Security Countermeasures—should aggressively pursue a reevaluation of information security and information systems security practices. These groups should also examine classification and safeguard practices for the purposes of improving security within rapidly changing technological and threat environments. This reevaluation should be accomplished within the context of the Presidential Review Directives on national security information and advanced telecommunications and encryption, as well as the Presidential Decision Directive on public encryption management.

8. Foster the industry-government partnership for improving services and security in public telecommunications.¹² (2)

Since government relies heavily on public telecommunications systems (e.g., about 90 percent of DOD's telecommunications are provided by public carriers), improved security, integrity, and assurance of services is crucial. Electronic government will rely even more heavily on public carrier telecommunications for services. Fostering this relationship includes the following:

- The voluntary and cooperative development of a unified concept of operational security for new technological developments such as universal personal telecommunications. The universal personal telecommunications concept provides personal telecommu-

nications services regardless of location, terminal or network access point. For example, individuals are assigned a unique personal network number so that services may reach them anytime and anywhere in the network. Within this context, the standards community needs to address national security/emergency preparedness, priority, access, fraud and information privacy issues. The National Communications System should work through the National Security Telecommunications Advisory Committee, with technical assistance from NSA and NIST, to foster government and industry liaison for developing security for Universal Personal Telecommunications capabilities and ensure National Security/Emergency Preparedness.

- The development and issuance of appropriate technical information bulletins for shared industry use which address security assessments of wireless access to commercial systems. The National Communications System and the Federal Communications Commission, working with public telecommunications services providers, should ensure information bulletins address all telecommunications threats.
- Working with industry to cooperatively improve security, integrity, and availability of the public switched network (PSN) provided by the telecommunications industry. The National Communications System and industry, through the National Security Telecommunications Advisory Committee and its supporting groups, should foster: conducting vulnerability assessments, sharing lessons learned, identifying improvements in legislation to protect PSNs, reporting on vulnerability incidents, and research on telecommunications security areas.

9. Implement the National Industrial Security Program. (2)

The Information Security Oversight Office, currently in GSA, should aggressively continue to work with industrial organizations under contract with the government to assure the protection of classified information while pursuing the reduction of costs, redundant requirements and improving efficiency as described in Executive Order 12829, January 8, 1993, National Industrial Security Program (NISP).¹³ This office, along with the Secretary of Defense, Secretary of Energy, and Director of Central Intelligence, should continue to work cooperatively with industry to implement the NISP. The following should be considered as a minimum: publication of a NISP operating manual; development of cost collection and tracking mechanisms; development of government-wide standardized background investigation forms and processes, as appropriate; standardized policy on reciprocity of investigations and inspections; portability of security clearances across agencies; development of uniform, standardized training and education requirements for industry and associated curricula and competency evaluation for government industrial security representatives; and the implementation and enforcement of NISP standards.

10. Develop a comprehensive Internet security plan. (2)

The existing interagency team, the Federal Networking Council, chaired by the National Science Foundation (NSF), should, in consultation with NIST and OMB, develop and promulgate a Federal Internet Umbrella Security Plan, by July 1994, for interconnecting the federal IT community with appropriate state, local, commercial, public and private, and foreign government activities. Such a global architecture should allow for security differences between networks. Use of layered protocol standards and techniques can be employed with a range or set of security service standards with appropriate gateway protection devices so that small restricted

communities and large open communities can safely interoperate. The security architecture should identify, as a minimum, the grades of services offered, how each is implemented and assured, how interconnections between networks should be made, and what can be done for those users not adequately served by any of the agreed-upon standard grades of service.

11. Coordinate security research and development. (2)

The President, by January 1994, should direct NIST, in coordination with OMB and with technical assistance from NSA, and the Office of Science and Technology Policy's Federal Coordinating Council on Science, Engineering, and Technology, to coordinate the development of a governmentwide plan for security research and development (R&D). The plan should be completed by October 1994. It should provide a baseline assessment of the current R&D investment in privacy and security. The plan should address development and prototyping of the next generation of information systems within the context of appropriate, adequate security and individual privacy features. The plan should also describe a process for continuous technology improvement or advancement, which includes evolving basic research into technology development and prototyping initiatives followed by the introduction of mature features into operational systems. Finally, the plan should recommend prototyping experiments to accelerate use of new technologies in trusted systems and systems having individual privacy protection features.

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IT11: IMPROVE METHODS OF INFORMATION TECHNOLOGY ACQUISITION

PURCHASING POWER TO THE PEOPLE

A government manager has a top priority special project with a very short lead time. On top of that, the project depends on use of a just-released proprietary software package. The manager dials into an "electronic information technology marketplace," and purchases the software online. The package is delivered within an hour, and the project is under way.

BACKGROUND

Most Americans are used to the annual model change in the automobile industry inspired in the 1930s by Alfred P. Sloan, Jr., of General Motors.¹ The extraordinarily rapid pace of technological change in information technology (IT) hardware and software creates the equivalent of three to five model changes each year.² The microprocessor—the engine of IT change—is the driving force behind the exponential rate of change being experienced.³ Despite this rate of change, federal government IT acquisition processes remain based on hierarchical approval processes and dollar thresholds established in the 1960s when computer systems were costly, often

complex, frequently custom-designed resources, available only from a limited number of vendors. Application software was also expensive then; and typically available only from a few vendors or developed by centralized in-house personnel. The IT acquisition rules and regulations of this era were written to encourage competition, control large dollar expenditures, and avoid waste when buying uniquely designed systems.

Unlike the private sector, most government IT acquisition processes also involve excessive layers of management oversight and regulatory rigidity. These add to procurement costs by requiring vendor and government teams to remain in place for lengthy periods and by ignoring the short technology life-cycle of many of the items being procured. It is not uncommon for the hardware and software ultimately delivered to a government agency to be immediately upgraded—or need to be upgraded—to stay current with commercial standards.

An excessive part of the government IT acquisition process is devoted to obtaining approvals in advance of actual IT procurement. Existing agency standard authorization levels from the General Services Administration are far too low—currently \$2.5 million per individual acquisition. Even government credit card purchase authorization levels are so low—\$500 in some

agencies—as to preclude their use in purchasing even simple personal computers and associated items. A reasonable increase of card purchase authorization levels for IT items would instantly reduce the time required by procurement processes, and allow government managers to implement new programs quickly and responsively. Private sector IT acquisition personnel, who generally have the flexibility and skills to deal efficiently and effectively with the rapidly changing IT market, save money for their employers. Real taxpayer savings can result from not wasting valuable government staff time on process issues.

Another of the most time-consuming and costly aspects of the current government IT acquisition process is the use of paper documents in preparing and exchanging solicitation, proposal, and negotiation information and subsequent contracts, reports, invoices, and payments. Many vendors feel that the IT acquisition process is more focused on the production of documents than the acquisition of IT goods and services. The importance most government acquisition staffs place on bureaucratic process issues delays the solicitation process and raises vendor costs. The emphasis on process also deflects vendor efforts away from providing the best IT products at the lowest price. An important part of the IT acquisition function is to facilitate industry access to agency IT buying plans and requirements as well as facilitate agency access to industry IT product and service offerings and technology plans in an arena where short technological life-cycles have demonstrated the need to fundamentally change acquisition processes. For more effective government IT acquisitions, there needs to be an improved ability to better judge state-of-the-art from state-of-the-practice technology.⁴

A number of private sector firms—particularly in the automobile manufacturing sector—have begun to integrate information systems with those of their suppliers.⁵ This approach virtually eliminates all paper involved in the acquisition process and facilitates close and continuing information

exchange between buyer and supplier throughout the product acquisition life-cycle.

With IT hardware and software technological life-cycles now frequently measured in periods as short as a few months, existing IT procurement processes (such as the GSA Multiple Award Schedule system with its infrequent updates) simply cannot keep up with new product introductions or price reductions for products achieving unusual marketplace success. In addition, IT product offering and price comparisons between different vendors' products are difficult to make rapidly and easily when large numbers of individual paper documents are used, thus reducing competition. The slow change process of the GSA schedule precludes government agencies being able to take advantage of the often lower street prices for many IT products. Great effort is frequently expended to justify going "off schedule" to obtain desired products at lowest cost. When program funds exist, the government should buy off-the-shelf and commodity-type IT products in the same manner as do commercial firms and private citizens: this will dramatically shorten the IT acquisition process and result in considerable savings.

Finally, unlike the private sector, there are virtually no mechanisms that allow government IT procurement officials and their staffs to see how IT acquisition process documentation and time delays represent real, quantifiable costs. The government does not use accounting practices that would allow these costs to be reflected as part of the total recorded cost of the IT goods or services being acquired. Knowing how acquisition process costs inflate overall IT costs will permit program and line managers to take action to reduce total IT expenditures.

NEED FOR CHANGE

The basic rules of the road for IT acquisitions are found in the Federal Property and Administrative Services Act of 1949, as

amended.⁶ When IT acquisition provisions were originally added to the act in 1965, the only IT items being purchased were large, expensive, mainframe computer systems. Although computers are now more widespread in government offices than typewriters were twenty years ago and software is often published in the tens of thousands of copies and is shipped to users in shrink wrapped boxes, the same IT procurement rules and processes continue to be followed. As a result and unlike private sector practices, federal government agencies now frequently spend excessive amounts of time and effort acquiring IT items which are not commensurate with either the cost or the technology life-cycle of the items being procured. Even simple procurements for off-the-shelf items take far too long, thereby delaying arrival and use of hardware and software needed for effective program implementation.

GSA, through existing IT procurement delegation levels, has limited executive branch agency authorizations to no more than \$2.5 million for an individual acquisition. While agency size and IT competence obviously vary, it seems reasonable that a new approach to GSA oversight should be considered. Increased agency authorization levels would give agencies substantially more freedom to manage their own IT affairs. The existence of a vigorous General Accounting Office, agency inspectors general, and GSA information resource management program reviews should provide the necessary oversight for those agencies unable or unwilling to manage their IT affairs effectively.

Because off-the-shelf IT tools are now often integral to even simple program implementation, the frequent delays in government program execution caused by an inability to acquire IT tools quickly need to end. Such delays, although quantifiable, are rarely recorded in government accounting systems or even recognized as an added cost of government operations. Program or line managers, having received budget authority for the function under their direc-

tion, should have the authority to buy a fully configured personal computer and relevant software when program conditions require immediate action.

Process reengineering techniques hold the most promise for allowing government users to be quickly supplied with state-of-the-art IT tools at competitive prices.⁷ A reengineered IT acquisition process for short technological life-cycle, off-the-shelf, IT tools can be achieved by creating an "Electronic IT Marketplace." This marketplace would allow:

- a dramatic decrease in the length of time it takes to get from product announcement or requirement definition to contract award so as to speed up the implementation of government programs dependent on IT tools; and
- a substantial decrease in the costs—both of the IT acquisition process itself and of the accompanying program office and vendor staff time involved.⁸

Implementation of such a dramatically new acquisition process like an "Electronic IT Marketplace" will not be easily accomplished. Because virtually all the existing statutes and regulations were developed with paper-based transactions in mind, many adjustments will be needed. The benefits of a dramatically faster, more streamlined, and more efficiently reengineered IT acquisition system are more than sufficient to justify the preparatory work required to test the concept.

The use of antiquated, paper-based processes in much of the federal government imposes a substantial cost to the business being conducted. Because these costs are not captured by government accounting systems, they are often thought invisible. Chrysler Corporation, for example, attributes much of its ability to bring new models to market more quickly than its competitors to the combination of an innovative staff team approach and the building of a new, IT-intensive, Automotive Technology Center in Auburn Hills, Michigan. The technology in this new center allows for easier and more rapid communication of information among

all team members, regardless of whether they are physically adjacent. Using IT tools instead of paper, new body designs existing only on a computer's screen are used to directly control the carving of clay models of proposed new designs. This innovative use of IT, eliminating the paper and most of the manual work previously required with traditional approaches, allows new models to be brought to market more quickly.

Government can slice substantial amounts of time and cost from its acquisition process—not just for IT items, but for everything it buys—simply by eliminating the need for paper documents and records.⁹ Measured over any reasonable life-cycle, getting the paper out of the system will pay the taxpayers dividends in the form of lower taxes just as an IT-intensive environment has enabled Chrysler to bring new models to market at lower prices. Other than additional government automation and networking resources, there are relatively few impediments to moving to a paperless electronic data interchange (EDI) acquisition system. Vendors should appreciate an EDI system because it will reduce their costs as well.

To enable government managers to make IT acquisitions with efficiencies approaching those found in the private sector, providing visibility to IT acquisition process costs and including them as part of program implementation costs is of exceptional urgency. If IT acquisition costs are removed from overhead accounts, the fees charged by executive branch acquisition entities can be budgeted for within program activity budget submissions and included in program activity accounting systems as a separately identifiable expense for each individual acquisition requiring such support. The added costs the present IT acquisition process imposes on IT tools when they are purchased by the government will thus be highlighted, allowing managers to manage more effectively.¹⁰ For example, at present, the costs of IT acquisition support provided by the Defense Commercial Communications Office, a fee-for-service organization, are capped at 2 percent. Removing IT acquisition staff costs from overhead accounts and placing them

on a fee-for-service basis—combined with program manager freedom to negotiate the most cost-effective arrangement possible from any IT acquisition office—will promote competition among acquisition organizations and give program managers the opportunity to be held accountable for their own and their program's effectiveness.¹¹

ACTIONS

Although the following actions are recommended in other NPR accompanying reports, they are summarized here to show how they collectively address the acquisition problems facing the IT community.

1. Conduct a two-year pilot test of a modernized IT acquisition framework. (1)

The administrator of GSA should conduct a two-year pilot test of a modernized IT acquisition framework.

2. Increase delegation of authority to agencies. (1)

The administrator of GSA should increase delegation levels for competitive IT procurements.

3. Expand use of commercial credit card. (1)

The heads of all federal agencies and the Federal Acquisition Regulatory Council should adopt the recommendations for expanding the use of the International Merchants Purchase Authorization Card.

4. Pilot test innovative approaches under the Multiple Award Schedule program. (1)

The administrator of GSA should begin a pilot test of an "electronic IT marketplace."

5. Expand electronic commerce. (2)

The President should issue an Executive Order establishing a governmentwide program for engaging in electronic

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commerce and the Federal Acquisition Regulatory Council should revise the Federal Acquisition Regulation to support full implementation of EDI.

6. Provide incentives for improved IT acquisition service efficiency. (2)

The President should issue an Executive Order instructing agency heads on franchising service functions, OMB should establish an Implementation Team to facilitate franchising implementation, and the President's Management Council should assume overall responsibility for franchising implementation for IT acquisition activities. Simultaneously, agency heads should authorize executive branch agency program and line managers to use any officially established IT acquisition entity conducting business in accordance with the Federal Acquisition Regulations.

Cross References to Other NPR Accompanying Reports

Improving Financial Management, FM06: "Franchise" Internal Services

Reinventing Federal Procurement, PROC08: Reform Information Technology Procurements; PROC09: Lower Costs and Reduce Bureaucracy in Small Purchases Through the Use of Purchase Cards; and PROC14: Expand Electronic Commerce for Federal Acquisition

Reinventing Support Services, SUP04: Streamline and Improve Contracting Strategies for the Multiple Award Schedule Program

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IT12: PROVIDE INCENTIVES FOR INNOVATION



CREATING THE WIN-WIN SCENARIO

A private sector contractor offers a proposal which will save the government money—his firm also increases its profits. A federal government manager finds a creative way to save money on an information technology project and receives an award from her agency since a portion of the savings can be reinvested in another important IT program.

BACKGROUND

Federal agencies expect to spend over \$25 billion in fiscal year 1993 to buy and use information technology (IT) but the dollars are being used so agencies can work faster—not smarter.¹ Agency use of IT has failed to keep pace with private industry where IT innovations have enabled companies large and small to reengineer their business practices. More IT dollars must be focused on the innovation needed for government reinvention as opposed to the automation of existing processes.

To promote innovation, the government needs to reinvent its funding of information technology and its relationships with the IT industry. Agencies must be encouraged to

experiment and accept managed risks which are inherent in innovation. Agencies, the IT industry, and the public will benefit from funding mechanisms and contract terms that encourage the continual introduction of IT solutions—and make government more responsive.

Four recommendations are presented here to foster much needed IT innovation in and among agencies by overcoming fiscal, procedural, and cultural barriers and by providing opportunities for creative partnerships between government and the IT industry:

- retain a portion of agency IT savings for reinvestment,
- promote performance-based contracting for IT,
- use multiyear funding for agency IT projects, and
- establish a governmentwide venture capital fund for innovative IT projects.

NEED FOR CHANGE

The Budget Paradigm: Today, agency IT managers have few organizational incentives to innovate.² In addition to the cultural resistance that reinvention can generate, funding of new IT initiatives has become increasingly difficult. Agencies face budget reductions in

direct response to any savings generated by IT innovation. IT managers are thereby provided with negative incentives to challenge the prevailing culture and accept the risks inherent in innovation. New investment in and experimentation with IT is relegated to a low priority in the face of recurring budget constraints.

Agency budgets must include the funds for IT innovation as well as the funds to operate, maintain, and modernize existing information systems. Agencies that have successfully innovated using IT must be allowed to continue IT investment and experimentation. Success-based funding of IT innovation would provide a new incentive for managers to reinvent agency business practices, since the funds available for new IT investment would relate to savings previously achieved.

Contracting Practices. With the technical complexity of IT procurements, most agencies have favored low risk, fixed-price contracts that place the IT industry in the role of a supplier of commodities rather than a partner in innovation. This approach may work when agencies want IT commodities, but it is unresponsive to agencies seeking creative IT solutions since the contractor is encouraged to sell as much of the offered product or service as the agency is willing to buy. For example, agencies frequently lease equipment from a contractor. Since the contractor needs to fully depreciate the investment in capital equipment being leased to the government, the contractor is discouraged from recommending solutions that would result in termination of the lease. The leased equipment remains in the agency despite the availability of new, more cost-effective products. Under these circumstances, there are few incentives for the IT industry to partner with agencies to get current technologies in place.

Contractors must be allowed to be more than suppliers of goods and services. Contract terms need to *incentivize* the contractor to perform as a partner, potentially permitting the contractor to share in actual

cost-savings realized by the agencies by implementing new solutions while minimizing the financial risks where agencies accept new solutions in place of old. Agencies need to create win-win scenarios for government-industry relationships. This points to making improvements in the contract vehicle itself.

The objectives of major IT initiatives are not easily met by a single contract type. The acquisition of innovative information technology often requires a complex systems integration effort that may best be articulated as a combination of fixed-priced, cost-reimbursement, incentive, indefinite delivery, time-and-materials, and labor hour provisions within an overall contract structure. Integral to the contract, clauses incorporating performance incentives, award fees, and value engineering must be crafted as positive instruments of reinvention through IT innovation rather than high-risk exceptions to accepted procurement practice.

Through effective management of hybrid contracts, industry IT providers can be given performance-based incentives for making the government more effective and efficient. Where contract terms and conditions allow the industry provider to increase profits by saving the government money, a win-win scenario is created. The price curves in IT hardware and the rapid pace of technology evolution make this scenario possible. For example, a creative solution that uses IT to save an agency \$1.00 can be shared as \$0.50 in savings to the government and \$0.50 in increased profits to the industry provider. This solution truly puts the government and industry in a strategic partnership, working together and using IT-based approaches to reengineer government.

The Office of Federal Procurement Policy has previously encouraged the use of performance and quality measures in service contracts, but limited knowledge and mixed experiences with this type of contracting have resulted in uneven implementation by the agencies.³ Agency IT managers and contracting officials need to be educated and encouraged to use performance-based

contracting techniques for IT. Hybrid contract types and contractual relationships based on partnership represent a significant culture change to many in both the government IT and contracting communities. As a starting point, a reeducation process is needed to change the common perception of the Federal Acquisition Regulations (FAR) as imposing an inflexible structure for government contracting.⁴ Too few government IT acquisitions have effectively used the latitude provided by the FAR.

However, success stories will need to demonstrate the advantages of this approach on a pilot basis before the risks of trying something new will be accepted more broadly. As an example of successful performance-based contracting, the Department of Housing and Urban Development (HUD) has documented its experiences with the HUD Integrated Information Processing Services (HIIPS) procurement, a 12-year contract valued at \$540 million. The HIIPS program office used performance mechanisms to create a strategic partnership with a vendor that has realized savings for the government in excess of \$30 million since 1991.⁵

Funding for IT. Major reinventions based on innovative uses of IT may begin with discrete, well-defined pilots, but are typically implemented as complex, multiyear programs. Such programs experience schedule changes because of a variety of unpredictable circumstances, with corresponding adjustments in required funding. The annual appropriations process is inconsistent with the funding flexibility required to effectively conduct these programs and efficiently acquire IT. On the contrary, the year-end spending phenomenon of annual appropriations works against IT innovation by encouraging agencies to acquire IT commodities that support current agency automation practices. Existing IT solutions and technologies are perpetuated and become more difficult to reengineer based on the ever-increasing "sunk cost." Contracts become "dumping grounds" in

the recurring year-end "spend it or lose it" syndrome of fiscal year funding. For example, analysis of the federal government's purchasing practices have shown that 50 percent of all personal computers are purchased in the fourth quarter of the fiscal year.⁶ The multiyear characteristics of IT programs demand more flexible funding mechanisms to provide effective funding support.

IT innovations that are authorized by specific appropriation should be provided multiyear funding. Although multiyear funding can be accomplished now through the appropriations process, it is done selectively. Greater emphasis on multiyear appropriations is needed for IT innovation. Another means of providing multiyear funding is through the use of legislatively established working capital funds (WCFs). One current example of the benefit of multiyear IT funding is available from the Department of the Treasury. The department operates its working capital fund in conjunction with its Executive Agent Program to fund selected agencywide IT projects.⁷ This approach has generated documented savings conservatively estimated at \$45 million. The Treasury attributes these savings directly to the multiyear aspects of its fund. Additional savings have also been realized through the reduced staffing requirements and economies of scale inherent in an agencywide program.⁸

Current legislation authorizes several agencies to operate such funds.⁹ However, the legislation does not consistently address IT services within the scope of these funds. New legislation to revise WCFs to support IT innovation may be required. In addition, effective use of multiyear funding requires concerted agency effort. As the fund manager, an agency must have in place the expertise and procedures to ensure accountability of the funds expended for each IT program on a continuing basis over multiple fiscal years. This requirement can present a challenge to agencies unfamiliar with this funding arrangement, but the experience of agencies with successful track records managing similar funds can serve as a

resource base. For example, the Treasury publishes a handbook that documents the specific procedures that department has used to successfully manage major IT programs funded through its WCF.¹⁰

In today's budgetary environment, proposals for innovative interagency use of IT are viewed as low priorities compared to the operation, maintenance, and modernization of existing agency systems. Even promising IT pilots often fail to achieve full implementation. Senior managers are too often unwilling to risk scarce agency dollars on IT innovations with current agency operations and personal careers at stake. This business-as-usual approach to IT funding by agencies will not generate the innovative solutions that are the core of government reinvention. No mechanism currently exists to identify and fund cross-cutting innovations that will have multi-agency or governmentwide impact.

IT innovation should be fostered governmentwide through the creation and operation of a fund that operates as the analog of a venture capital firm in the private sector. This fund complements the Innovation Capital Fund recommended in a companion NPR report.¹¹ Operation of a venture capital fund would allow agency innovators to compete for available funding, ensure that agency initiatives are screened through a critical due diligence process, and permit agency resources to be augmented by the fund to enable selected reinvention projects to proceed. However, the fund's benefit would not be just as a dollar pool for funding IT. A governmentwide IT innovation program would draw the attention and participation of state and local governments and the IT industry, all of whom stand to benefit from IT innovation in government. Thus, the manager of the fund would be positioned to broker the expertise and resources of other interested parties in fund-sponsored projects further leveraging fund dollars.

ACTIONS

1. Retain a portion of agency information technology savings for reinvestment. (2)

The President, by January 1994, should direct the Office of Management and Budget (OMB) to instruct agencies to identify IT savings in agency budget submissions for potential reinvestment starting in fiscal year 1996. As part of its instructions, OMB should establish the reporting requirements by which agencies quantify IT savings and track reinvestment in successive fiscal years as part of agency budgets. The instructions to initiate this budget process must be available to agencies no later than July 1, 1994, to accommodate the fiscal year 1996 budget cycle.

Another NPR accompanying report proposes that up to 50 percent of agency appropriations unobligated at the end of a fiscal year be identified for carryover to the next fiscal year.¹² For IT savings, this could be accomplished in two ways. During the current fiscal year, recognized savings could be transferred to an agency's WCF to support IT innovation.¹³ In future years, recognized savings could be identified within the annual budget and appropriations process and included in agency appropriations. Through these two mechanisms, a percentage of recognized savings would effectively be carried forward to fund credible programs for IT innovation and experimentation. Such programs would specifically take advantage of new IT technology, demonstrate measurable improvements in agency services, and realize additional savings.

OMB should also collaborate annually with the General Accounting Office to identify the minimum agency accounting procedures and performance measurement criteria required to support agency claims of IT savings. This will facilitate agreement between OMB and congressional appropriations

committees on the specific agency savings which will be considered for reinvestment. Results of the collaboration should be reflected in the OMB instructions recommended earlier.

Success-based funding must be grounded in an auditable baseline of agency performance in terms of outcomes and costs in order to attribute specific savings to IT innovation. Only those agencies that meet the challenge of demonstrating auditable results would receive the benefits of success-based funding. Consistent accounting procedures and performance measurement criteria must be employed across agencies to clearly identify those savings resulting from IT innovations. The close relationship between documented agency savings from IT innovation, agency budgets, and the appropriations process point to the central role of OMB in implementing success-based funding.

2. Promote performance-based contracting for information technology. (2)

The Administrator of GSA, by January 1994, in coordination with the interagency team developing a plan for Federal IT acquisition, should lead a governmentwide effort to promote performance-based contracting for IT, starting with the preparation of an action plan by April 1994. A concerted effort is essential to address the needed revision of agency IT acquisition practices, development of new training materials, and publication of case studies to exemplify performance-based contracting. Consideration should also be given to include specific language in the FIRMR and FAR encouraging performance-based contracts and clarifying the latitude available for IT procurements.

3. Use multiyear funding for agency information technology projects. (3)

The President, by January 1994, should direct OMB to identify major agency innovations appropriate for multiyear funding beginning with agency budget submissions for fiscal year 1995. OMB should then col-

laborate with the congressional appropriations committees on an annual basis to secure multiyear funding for these IT projects thereby establishing its acceptance and use.

OMB should also complete an agency-by-agency review of current WCF legislation by October 1994. Based on the results of this review, OMB should assist agencies in establishing or revising WCFs to support multiyear funding for agency IT innovation.

4. Establish a governmentwide venture capital fund for innovative information technology projects. (3)

The President, by January 1994, should direct OMB to develop proposed legislation by April 1994, to establish a governmentwide venture capital fund for innovative IT projects with significant benefit to more than one program or agency. Enabling legislation for the fund should parallel the legislation for existing agency WCFs; with concurrence from appropriations committees appropriated monies should be transferred to the fund and retained without fiscal year spending restrictions until expended on fund-sponsored initiatives. The legislation would also contain provisions establishing funding procedures and operating mechanisms that distinguish the venture capital fund from a traditional WCF. Consideration should be given to the options of creating an independent fund or expanding the scope of the existing Information Technology Fund administered by the General Services Administration.¹⁴

Considerations in the fund's operational framework must ensure that the fund is established and operated with the conditions necessary to promote partnership with the IT industry; leverage the fund with other resources of federal, state, and local agencies, and the private sector; and manage the risk of IT innovation. The criteria by which initiatives are evaluated and selected for fund sponsorship are critical to the value of the fund. The criteria should be established, reviewed, refined, and published in a process

open to public comment. The objective of the criteria should be to identify those initiatives that present the best value to the government, considering both return on investment and risk. The criteria would need to address potential improvement of agency, interagency, and intergovernmental operations. Implementation costs, demonstrated savings, agency competency, technological feasibility, interagency and intergovernmental commitments, and the participation of the IT industry would all be carefully weighed.

Venture capital equivalent to 1 percent of the federal government's annual expenditures for IT would provide sufficient capital to operate the fund. Based on fiscal year 1993 estimates, the 1 percent formula would result in a funding level of approximately \$250 million.¹⁵ However, it would be self-defeating to IT innovation to obtain this funding from agency IT funds which are already constrained. Therefore, funding should be identified from within existing agency program appropriations and, with concurrence from the appropriations committees transferred to the fund to avoid new appropriations. The method of capitalization, together with procedures for periodically reviewing and setting the funding level in succeeding fiscal years, would be key ingredients of the enabling legislation to establish the fund. The relationship of the fund and fund-sponsored initiatives to agency information system plans, budgets, and appropriations points to OMB for fund oversight and development of its operational framework.

Recommendation of projects to be sponsored by the fund would be an appropriate role for the Government Information Technology Services (GITS) Working Group proposed earlier in this report. In addition, the views of state and local government and the private sector should be considered through an advisory role for industry groups and government associations and/or a consultant role for distinguished innovators.

FISCAL IMPACT

Significant budgetary savings can be expected on a continuing basis as the savings are reinvested in new IT innovations that would otherwise not be possible. The extent of the savings that could be achieved governmentwide, however, cannot be estimated with any accuracy.

Promoting performance-based contracting has no short-term budgetary impact since it can be implemented through administrative change and revision of current agency procurement practices. However, significant long-term operational efficiencies can be expected based on improved IT solutions which facilitate greater government reinvention. As an example of successful performance-based contracting, the Department of Housing and Urban Development (HUD) has documented its experiences with the HUD Integrated Information Processing Services (HIIPS) procurement, a 12-year contract valued at \$540 million. The HIIPS program office used performance mechanisms to create a strategic partnership with a vendor that has realized savings for the government in excess of \$30 million since 1991.¹⁶

Multiyear funding of agency IT projects has a minimal short-term budgetary impact since it will not change current appropriations. However, significant long-term budgetary savings can be expected. Although the extent of the savings that could be achieved governmentwide cannot be estimated with any accuracy, one current example of the benefit of multiyear IT funding is available from the Treasury Department. The department operates its working capital fund in conjunction with its Executive Agent Program to fund selected agencywide IT projects.¹⁷ This approach has generated documented savings conservatively estimated at \$45 million. Treasury attributes these savings directly to the multiyear aspects of its fund. Additional savings have also been realized through the reduced staffing require-

ments and economies of scale inherent in an agencywide program.¹⁸

Establishment of a governmentwide venture capital fund has a continuing budgetary impact since it will be funded through ongoing fiscal year appropriations. However, significant long-term budgetary savings can be expected through the implementation of IT innovations that would otherwise not be possible. The extent of the savings that could be achieved governmentwide cannot be estimated.

Cross References to Other NPR

Accompanying Reports

Mission-Driven, Results-Oriented Budgeting, BGT05:

Provide Line Managers with Greater Flexibility to Achieve Results

Improving Financial Management, FM07: Create Innovation Funds; and FM12: Manage Fixed Asset Investments for the Long Term

Reinventing Federal Procurement, PROC15: Encourage Best Value Procurement

Endnotes

1. U.S. Office of Management and Budget (OMB), *Current Information Technology Resource Requirements of the Federal Government: Fiscal Year 1993* (Washington, D.C.: U.S. Government Printing Office, 1992), p. 3.
2. U.S. General Accounting Office, *Transition Series: Information Management and Technology Issues*, GAO/OCG-93-5TR (Washington, D.C.: U.S. General Accounting Office, December 1992), pp. 19-22.
3. U.S. Office of Management and Budget, Office of Federal Procurement Policy, *Service Contracting Policy* Letter 91-2 (Washington, D.C., April 9, 1991), p. 2.
4. The FAR is issued as chapter 1 of title 48, *Code of Federal Regulations*.

5. Arky, M. Elizabeth, Special Assistant to the Secretary, Department of Housing and Urban Development, "HUD Comments On Reengineering Through Information Technology," August 9, 1993, p. 3. (Letter.)
6. Brewin, Bob, "PC Price War Forecast For End of Fiscal Year," *Federal Computer Week*, (August 9, 1993), p. 4.
7. U.S. Department of the Treasury (Treasury), *Establishment of Executive Agents* (TD 84-02, September 4, 1991), p. 2.
8. U.S. Department of the Treasury, Office of Telecommunications Management, *Innovation in Telecommunications Management* (February 1993), p. 7.
9. Agencies with a legislatively enacted WCF include the Departments of Commerce, Health and Human Services, Housing and Urban Development, the Interior, Justice, Labor, State, Transportation, and the Treasury.
10. Treasury, pp. 11-27.
11. National Performance Review Accompanying Report, *Improving Financial Management* (Washington, D.C.: U.S. Government Printing Office [GPO], September 1993).
12. National Performance Review Accompanying Report, *Mission-Driven, Results-Oriented Budgeting* (Washington, D.C.: U.S. GPO, September 1993).
13. Working capital funds have been authorized for a number of agencies. For example, the Departments of Transportation and the Treasury have long-established funds.
14. The Information Technology Fund was authorized by the Paperwork Reduction Reauthorization Act of 1986. The fund enables the General Services Administration to efficiently provide common information technology resources to federal agencies on a coordinated basis.
15. OMB, *Current Information Technology Resource Requirements of the Federal Government: Fiscal Year 1993*, p. 3.
16. Arky, M. Elizabeth, p. 3.
17. Department of the Treasury, Treasury Directive (TD) 84-02, "Establishment of Executive Agents" (September 4, 1991), p.2.
18. Department of the Treasury, Office of Telecommunications Management, "Innovation in Telecommunications Management" (February 1993), p. 7.

IT13: PROVIDE TRAINING AND TECHNICAL ASSISTANCE IN INFORMATION TECHNOLOGY TO FEDERAL EMPLOYEES

PEOPLE HELPING PEOPLE COPE WITH TECHNOLOGY

A federal employee working on an important project accidentally erases some critical microcomputer files. He sends a quick e-mail message to a colleague in another agency, who is an expert in micro-computer utility programs. Within minutes, this on-line pal helps the first employee recover the lost files using an advanced utility program.

BACKGROUND

Every year, increasing numbers of federal workers are expected to use information technology (IT) skills and knowledge in performing their jobs. However, many members of the federal workforce lack sufficient training and background to use new technologies effectively, and many managers fail to realize the importance of IT training. Compared with private industry, the federal government invests few dollars and little time in IT training and

retraining.¹ Without this investment, the federal workforce is unable to keep pace with the rapid changes in technology and improved methods of customer service. Federal agencies rely on information technology, and are increasingly dependent on the skills and capabilities of their workforce to enhance productivity and ensure quality service to the American public. Yet they provide insufficient incentives to their workforce to seek IT education and training, insufficient opportunities to obtain training—even when it is desired and necessary—and do not generally incorporate IT training in their strategic mission planning.

The cost of insufficient or no training in information technology is significant. In a worst case scenario, people do not use their computers at all, and the organization's investment in hardware and software is wasted. In a less extreme circumstance, every time a user relies on a formal support function rather than performing IT work on his or her own, the organization pays at least \$25 in overhead and salaried time. Every time a user asks a coworker for help, it costs from \$15 to \$100.²

NEED FOR CHANGE

Modest changes could improve the knowledge and skills of the federal workforce. Skills enhancement efforts at all levels of the federal workforce are crucial, because IT is a fundamental enabler of organizational change. IT awareness must also be improved at all levels of the federal workforce to encourage and support continuing reinvention efforts.

Senior managers have not developed the kind of experience and expertise in IT that they have in finance, human resources, and accounting.³ At a minimum, they need a basic knowledge of how to ensure the development and use of management information systems and other technological resources that meet their agency's needs.⁴ Recently, the Office of Personnel Management (OPM) began working with a task force of senior executives to refine Senior Executive Service (SES) qualifications to better match the competencies and skills identified in the recent update of the SES Management Excellence Framework.⁵ There is a need to address IT competency in this effort, as well as ensure that it is made a part of the SES recertification program. Including IT competency in the SES recertification program will emphasize IT as an integral part of the continuous and comprehensive learning organization. In order to provide basic knowledge, an IT course should provide insight as to how to integrate technology into the workplace, include development strategies for using new technology to manage and improve program effectiveness, and explain the impact of technological changes on the organization.

The General Accounting Office recommends that an agency's senior official for information resources management (IRM) play a leading role in defining and preparing the agency's technology plan, and then ensure that the ongoing and proposed systems development projects fall logically within this plan. Federal IRM leaders need to be highly competent individuals with the appropriate background and capabilities to

administer IRM programs and manage IRM resources.

The federal government lacks a mechanism that would allow an end user to receive on-the-spot assistance with simple IT questions regarding hardware configuration, new technologies, application software packages, and information resources needed to perform various program and administrative responsibilities. Throughout the workforce there are individuals who have both the expertise and desire to assist colleagues in solving such problems. There is a need for a support system that can be institutionalized as a network of individuals with specific skill sets available to help colleagues via electronic (e.g., bulletin boards, e-mail, on-line databases, etc.) or personal interaction. These individuals can function as on-line pals to provide agencies with help-desk functions where none presently exist and to diffuse innovation.

The federal government spends billions of dollars each year in IT contracts and acquisitions. A majority of the contracts and acquisitions do not include training provisions in the initial design stages; as a result this places a tremendous burden on the overall agency training budget.

ACTIONS

1. Establish a program to train nontechnical senior executives and political appointees in information technology. (2)

The President, by January 1994, should direct OPM and the General Services Administration (GSA) to jointly develop and administer a training program which should begin by May 1994. OPM and GSA should consult with each agency on the program development and implementation strategies at the agency level. The program can be delivered as a series of executive technology seminars implemented through "centers of excellence" such as the Information Resource Management College of the

National Defense University, the Federal Executive Institute, or a university. The program could be modeled after the New York City Department of Personnel's Executive Development Program, which consists of monthly half-day sessions on a variety of sophisticated IT and management topics, including strategic planning/top-down planning, reengineering, implementing systems, electronic mail, video conferencing, voice-enhanced technologies, geographic information systems, database management systems, imaging, and multi-agency complaint and inspection systems.

Program participants should develop a clear understanding of how their organization can benefit from information technology; learn effective uses of IT—particularly in the federal sector; and intensify their commitment to using, managing, and implementing IT. Program topics could include IT acquisition and implementation, principles of organizational change and the impact of new technologies, customer service, and the role of technology in stimulating service redesign. In addition, the program should provide an opportunity for executives to share their experiences in IT implementation with their peers.

2. Require "minimum competency" in information technology for Senior Executive Service candidates. (1)

Agencies and OPM by May 1994, should jointly require that candidates demonstrate a minimum competency in IT prior to their appointment in the SES. Specifically, candidates should be able to (1) integrate technology into the workplace, (2) develop strategies using new technology to manage and improve program effectiveness, and (3) understand the impact of technological changes on the organization.⁶

Agencies and OPM should also require that IT competency be included in the SES recertification program. The standard for IT competency in SES recertification should include the development and use of management information systems and other

technological resources to meet an agency's current and future needs.

3. Require IRM managers to meet certification standards. (1)

OPM and GSA should identify IRM competencies and skills requirements for IRM managers, and establish an IRM Executive Institute to provide needed management training, and identify programs or centers of excellence for implementation. All federal employees pursuing an appointment to an IRM management position should be required to complete a 2-year IRM management training program or demonstrate mastery of competencies before receiving their appointment.

The first training program should begin by May 1994. It should consist of courses and seminars tailored to achieve the individual IT needs of each agency. The program will provide a clear vision of how an organization can benefit from information technology and provide the skills needed to develop an agencywide IRM management strategic plan that is linked to overall agency goals and objectives. In addition, the program will build the competency required to manage major IT acquisitions of general purpose data processing and telecommunications systems, facilities, and related services. Various components of the IRM Executive Institute could partner with programs such as GSA's Trail Boss Program, the Federal Acquisition Institute, and/or the centers of excellence listed in action 1.

4. Promote collegial assistance for IT. (1)

Each agency head should develop a mechanism for identifying individuals with varying levels of IT expertise who wish to participate as *on-line pals*. The existing Federal Information Resources Management Policy Council (FIRMPoC) should be responsible for coordinating the governmentwide collegial assistance program.⁷ This program should be developed by October 1994.

ESTABLISH SUPPORT MECHANISMS FOR ELECTRONIC GOVERNMENT

5. Include training as part of all information technology contracts and acquisitions. (1)

By November 1993, each agency's IT contracts or acquisitions in the early stages of development, and all future acquisitions and contracts should include a provision for training.

FISCAL IMPACT

IT training costs can be offset by using intra-agency training initiatives. For example, the State of Texas has established contracts with four statewide training vendors to train all state employees for \$60-\$110 a day in a wide variety of end-user areas. The federal government should be able to obtain a similar bargain through GSA or other types of contracts, so each agency would not have to invest heavily in training setup in all locations. The New York City Department of Personnel has established the IT Institute for Senior Executives instead of providing individual agency training for senior executives. The IT Institute consists of the Leadership Institute which is designed to develop its managerial workforce; and the Certificate Programs designed for supervisors and staff.

Cross References to Other NPR Accompanying Reports

Reinventing Human Resource Management, HRM06:
Clearly Define the Objective of Training as the
Improvement of Individual and Organizational
Performance; Make Training More Market-Driven

Endnotes

1. Kendrick, James E., "IT Management Focus Must Extend Beyond Tip of the Iceberg: (In Perspective: How Government Information Technology Management Can Improve Cost-Effective Performance," *Federal Computer Week* (September 21, 1992), p. 17.
2. Masie, Elliot, and Rebekah Wolman, *The Computer Training Handbook; How to Teach People to Use Computers* (Raquette, NY: National Training & Computers Project, 1989), p. 12.
3. Keen, Peter G.W., *Shaping the Future: Business Design through Information Technology* (Boston: Harvard Business School Press, 1991), p. 9.
4. U.S. General Accounting Office, Information Management and Technology Division, "Meeting the Government's Technology Challenge, Results of a GAO Symposium," February 1990, pp. 5-6.
5. Roehmer, Susan, Office of Executive and Management Policy Human Resources Development Group, Office of Personnel Management, "Senior Executive Service Executive/Managerial Qualifications," FPM Letter 920, Washington, D.C., Exhibit 5-A.
6. These qualifications, needed for technology management, were identified under the "technology management" competency in Office of Personnel Management, Human Resources Development Group, "Leadership Effectiveness Survey," October 1991.
7. The FIRMPoC is comprised of the senior agency IRM officials, and it meets regularly to discuss policy and program issues, provide advice to the General Services Administration and the Office of Management and Budget, and share other information of mutual interest.

SUMMARY OF FISCAL IMPACT



Net savings of the IT recommendations are \$5.4 billion for the period 1995-1999. These savings are primarily comprised of three components, including: IT infrastructure

(savings of \$4.3 billion), electronic benefit transfer (savings of \$1.2 billion), and electronic access to government (investment of \$0.1 billion). The other initiatives require further study or have no net cost or savings.

Change in Budget Authority by Fiscal Year (Dollars in Millions)

Recommendation	1994	1995	1996	1997	1998	1999	Total	Change in FTEs
IT02: Implement Nationwide, Integrated Electronic Benefit Transfer.....	0.0	-118.7	-119.8	-280.9	-308.4	-350.0	-1,177.8	cbe
IT03: Develop Integrated Electronic Access to Government Information and Services.....	0.0	21.7	24.6	23.4	25.1	26.8	121.6	cbe
IT09: Establish an Information Infrastructure.....	0.0	0.0	-444.0	-862.5	-1,365.0	-1,646.5	-4,381.0	cbe
Total	0.0	-97.0	-539.2	-1,120.0	-1,648.3	-1,969.7	-5,374.2	cbe

cbe = Cannot be estimated (due to data limitations or uncertainties about implementation timelines).

Change in Outlays by Fiscal Year (Dollars in Millions)

Recommendation	1994	1995	1996	1997	1998	1999	Total
IT02: Implement Nationwide, Integrated Electronic Benefit Transfer.....	0.0	-118.7	-119.8	-280.9	-308.4	-350.0	-1,177.8
IT03: Develop Integrated Electronic Access to Government Information and Services.....	0.0	21.7	24.6	23.4	25.1	26.8	121.6
IT09: Establish an Information Infrastructure.....	0.0	0.0	-444.0	-862.5	-1,365.0	-1,646.5	-4,381.0
Total	0.0	-97.0	-539.2	-1,120.0	-1,648.3	-1,969.7	-5,374.2

cbe = Cannot be estimated (due to data limitations or uncertainties about implementation timelines).

APPENDICES



APPENDIX A: SUMMARY OF ACTIONS BY IMPLEMENTATION CATEGORY

(1) Agency heads can do themselves

- IT03.2 Implement an integrated governmentwide national one-stop 800-number calling service.
- IT04.1 Formalize the Federal Law Enforcement Wireless Users Group.
- IT09.2 Issue a governmentwide e-mail records management policy.
- IT11.1 Conduct a two-year pilot test of a modernized IT acquisition framework.
- IT11.2 Increase delegation of authority to agencies.
- IT11.3 Expand use of the commercial credit card.
- IT11.4 Pilot test innovative approaches under the Multiple Award Schedule program.
- IT13.2 Require "minimum competency" in information technology for Senior Executive Service candidates.
- IT13.3 Require IRM managers to meet certification standards.
- IT13.4 Promote collegial assistance for IT.
- IT13.5 Include training as part of all information technology contracts and acquisitions.

(2) President, Executive Office of the President, or Office of Management and Budget can do

- IT01.1 Plan for effective use of information technology throughout government.
- IT01.2 Coordinate and oversee implementations of information technology plans.
- IT02.1 Design an integrated EBT implementation plan.
- IT02.2 Draft policies and/or legislation needed to facilitate nationwide implementation of EBT.
- IT03.1 Coordinate, recommend, and implement information technology initiatives to improve customer service.
- IT03.3 Implement an integrated one-stop government services kiosk.
- IT03.4 Implement an integrated governmentwide one-stop electronic bulletin board system.
- IT03.5 Work with private industry to advance the implementation of technologies that provide citizen access to government information and services.
- IT04.2 Establish a National Law Enforcement/Public Safety Wireless Network for use by federal, state, and local governments.

APPENDICES

IT05.1	Integrate governmental financial filings, reporting, and payments processing.	IT10.6	Emphasize need for information security in sensitive unclassified systems.
IT05.2	Determine ways to eliminate the need for filing routine income tax returns.	IT10.7	Reevaluate security practices related to national security data.
IT06.1	Develop and implement a U.S. Government International Trade Data System.	IT10.8	Foster the industry-government partnership for improving services and security in public telecommunications.
IT07.1	Organize the implementation of a national environmental data index.	IT10.9	Implement the National Industrial Security Program.
IT08.1	Improve electronic mail and messaging among federal agencies.	IT10.10	Develop a comprehensive Internet security plan.
IT09.1	Develop a Government Information Infrastructure (GII) to effectively use government information resources and support electronic government applications.	IT10.11	Coordinate security research and development.
IT09.2	Consolidate and modernize government data processing centers.	IT11.5	Expand electronic commerce.
IT09.3	Reengineer basic systems for improved delivery of government services.	IT11.6	Provide incentives for improved IT acquisition service efficiency.
IT09.4	Consolidate and integrate federal government private networks.	IT12.1	Retain a portion of agency information technology savings for reinvestment.
IT10.2	Establish uniform privacy protection practices and generally acceptable implementation methods for these practices.	IT12.2	Promote performance-based contracting for information technology.
IT10.3	Develop standard encryption capabilities and digital signatures, for sensitive, unclassified data.	IT13.1	Establish a program to train non-technical senior executives and political appointees in information technology.
IT10.4	Develop generally accepted principles for information security.	(3) Requires legislative action	
IT10.5	Develop a national crisis response clearinghouse.	IT10.1	Establish a Privacy Protection Board.
		IT12.3	Use multiyear funding for agency information technology projects.
		IT12.4	Establish a governmentwide venture capital fund for innovative information technology projects.

APPENDIX B: METHODOLOGY



The National Performance Review's (NPR) Information Technology (IT) Team was comprised of information technology professionals, budget, and logistics personnel from the public and private sectors. The team undertook quality functional deployment (QFD) to define the project and provide a framework for its decisionmaking and ongoing activities. A QFD is a structured total quality management exercise used by planning groups to clarify issues and problems to be addressed, and identify strategies to obtain optimal results while achieving objectives within predetermined timeframes. The principles developed for guiding the IT Team in the creation of its recommendations were a product of QFD.

The team identified the following issues as priorities to be addressed in order for information technology to support the delivery of government services adequately.

- The information technologies currently employed by the federal government are not delivering what the customer needs, nor is its potential being fully utilized.
- The federal government does not adequately coordinate the systems now in place.
- There is insufficient understanding of who are the customers for information technology and what are their needs.
- Too many barriers exist within the government, both regulatory and legislative, to use information technology effectively.
- All levels of the government workforce need continuous education in information technology.

All of the team's decisions, which are presented as recommendations, were made within the framework of solving the above-listed issues. Having developed its framework, the IT Team then proceeded to review federal agency planning documents, studies, reports, issue papers, and the current literature on innovative approaches being piloted or planned in the government and private sectors. The team also held a series of meetings with government and private industry representatives to discuss the latest developments in new technology. Team members also reviewed the federal regulatory framework for information technology acquisition. All IT Team recommendations were coordinated with those of the other NPR agency and cross-cutting teams.

APPENDIX C: GLOSSARY



Automated teller machine (ATM). Publicly accessible computer terminal that allows banking customers electronic entry to their accounts.

Bulletin Board System (BBS). An electronic filing system where people can exchange and post messages with others. Increasingly, BBSs are providing additional services, including electronic mail, software libraries, and information locator services.

Centers of Excellence. Organizations which have developed expertise in particular areas.

Digital signature. An electronic protocol that uniquely identifies a person or institution transmitting an electronic document.

Digital encryption. An electronic encoding protocol to provide security for electronic documents.

Direct federal payment program. A benefit program that is paid by the federal government directly to the recipient.

Electronic benefit transfer (EBT). The electronic payment of benefits to program recipients.

Electronic Benefit Transfer Task Force. An interagency task force established to implement a nationwide EBT program to

enhance quality of service to beneficiaries, and to improve administrative efficiency, and security. The task force will develop governmentwide goals, performance standards, and a schedule for implementation.

Electronic data interchange (EDI). The electronic transmission of business transaction information in a standard format between trading partners.

Electronic mail (E-mail). Electronic transmission of messages between local or remote workstations through use of local and wide area networks.

Federal Information Center (FIC). The FIC is a one-stop source of assistance on questions related to the federal government. Individuals may call the FIC via an 800 number or contact them by mail. Information specialists either answer the question or pinpoint sources of information.

Federal Information Resources Management Policy Council (FIRMPoC). A federal senior level steering group made up of senior IRM managers that advise GSA on policy and program issues relating to IRM.

Federal Networking Council (FNC). A federal government interagency council consisting of representatives from federal agencies

that have requirements for operating and using networking facilities, mainly in support of research and education, and for advancing the evolution of the federally funded portion of the Internet.

FedWorld. An electronic bulletin board system (BBS) operated by the National Technical Information Service that provides links to over 100 federal BBSs and information centers.

FTS2000. The federal government's existing telecommunications services contracts for intercity voice and data communications.

Government Information Infrastructure (GII). Subset of the National Information Infrastructure, or "information highways," used exclusively by the government.

Information Infrastructure Task Force (IITF). A federal government interagency task force consisting of representatives from federal agencies involved in telecommunications and information policy setting. The task force addresses issues that promote the application of the National Information Infrastructure.

Interagency Information Resources Management Infrastructure Task Group (IIITG). The IIITG is an interagency task group formed by FIRMPoC to look for ways to improve the information infrastructure within the government through cooperative efforts and resources-sharing.

Internet. A global "network of networks" providing communications among over 1 million computers and 10 million users. National and Government Information Infrastructures will be constructed from the same technologies used to implement the Internet. These include telecommunications linkages, switches, computers, network protocols, and network services for interoperation, and transmitting data.

Joint federal-state administered public assistance program. A benefit program that is jointly funded by federal and state governments, but is administered at the state level.

Kiosk. A conveniently located, interactive, computer terminal from which the public can readily access governmental services.

Local area network (LAN). A network of computer terminals that are linked by a shared processor that allows individual terminals to communicate electronically with one another.

National Academy of Public Administration. A nonprofit, nonpartisan organization chartered by Congress to improve governance and public management at all levels.

National Information Infrastructure (NII). Consists of (1) thousands of interconnected, interoperable telecommunications networks, (2) computer systems, televisions, fax machines, telephones, and other "information appliances," (3) information databases and services (e.g., "digital libraries"), and (4) trained people who can build, maintain, and operate these systems. In the future, the NII will enable all Americans to access information and convey voice, video, and data to others for an affordable price.

Office of Science and Technology Policy (OSTP). OSTP serves as a source of scientific, engineering, and technological analysis and advice for the President with respect to major technology policies, plans, and programs of the federal government.

OMB Circular A-130. Document issued by OMB titled *Management of Federal Information Resources*. This document provides uniform governmentwide information management policies in such areas as information resources management planning, records management, and information dissemination policy.

One-stop shopping. Customer access to the government or private sector which allows connection to a full menu of services. This may be accomplished via kiosk, personal computer, telephone, or other means.

Paperwork Reduction Act (PRA) of 1980. This act established a broad mandate for agencies to perform their information management activities in an efficient, effective, and economical manner. This act requires OMB to develop, implement, oversee, and evaluate information management practices and policies federal governmentwide.

Regulation E (Reg E). Reg E of the Electronic Funds Transfer Act applies to electronic transactions that result in a debit or a credit to a consumer asset account. This provision limits recipient liability for misused, lost or stolen benefits whether or not they are negligent.

Service to the Citizen Intergovernmental Task Force. An interagency task force established to improve the federal government's delivery of services to customers. This task force also works to develop customer service

related partnerships with state and local governments, private industry, academia, and nonprofit organizations.

Venture capital fund. A legislatively-authorized fund which enables the federal government to centrally finance innovative information technology projects with potential benefit to multiple agencies. The fund is patterned after a working capital fund; money collected into the fund is available without fiscal year limitations. As proposed, OMB would manage this fund.

Virtual agency. A citizen's view of how the government appears to operate based upon electronically enabled, integrated program information and services organized around common functions of service. Examples could be a virtual housing agency or a virtual entitlement agency.

Working Capital Fund (WCF). A legislatively-authorized fund which enables an agency to centrally finance various services. Working capital funds are typically used by agencies to finance administrative services and telecommunications.

APPENDIX D: ACCOMPANYING REPORTS OF THE NATIONAL PERFORMANCE REVIEW



GOVERNMENTAL SYSTEMS	ABBR.	AGENCIES AND DEPARTMENTS	ABBR.
Changing Internal Culture		Agency for International Development	AID
Creating Quality Leadership and Management	QUAL	Department of Agriculture	USDA
Streamlining Management Control	SMC	Department of Commerce	DOC
Transforming Organizational Structures	ORG	Department of Defense	DOD
Improving Customer Service	ICS	Department of Education	ED
		Department of Energy	DOE
		Environmental Protection Agency	EPA
		Executive Office of the President	EOP
		Federal Emergency Management Agency	FEMA
Reinventing Processes and Systems		General Services Administration	GSA
Mission-Driven, Results-Oriented Budgeting	BGT	Department of Health and Human Services	HHS
Improving Financial Management	FM	Department of Housing and Urban Development	HUD
Reinventing Human Resource Management	HRM	Intelligence Community	INTEL
Reinventing Federal Procurement	PROC	Department of the Interior	DOI
Reinventing Support Services	SUP	Department of Justice	DOJ
Reengineering Through Information Technology	IT	Department of Labor	DOL
Rethinking Program Design	DES	National Aeronautics and Space Administration	NASA
		National Science Foundation/Office of Science and Technology Policy	NSF
		Office of Personnel Management	OPM
Restructuring the Federal Role		Small Business Administration	SBA
Strengthening the Partnership in Intergovernmental Service Delivery	FSL	Department of State/ U.S. Information Agency	DOS
Reinventing Environmental Management	ENV	Department of Transportation	DOT
Improving Regulatory Systems	REG	Department of the Treasury/ Resolution Trust Corporation	TRE
		Department of Veterans Affairs	DVA



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December 22, 1993

OFFICE OF
THE CHAIRMAN

MEMORANDUM

TO: Members of Regulatory Working Group
FROM: Jeffrey Lubbers, Research Director, ACUS
RE: Training for Regulatory Appointees

At the initial (November) meeting of the Regulatory Working Group, I was asked to prepare a memorandum describing the format and possible agenda for a training program for newly appointed regulatory officials.

Background

Vice President Gore's Report of the National Performance Review (REG 10, p. 168) recommended the establishment of "a basic training program for presidential appointees assigned to regulatory agencies." The background report prepared for the NPR, scheduled for publication soon, describes the lack of such training, especially as compared to orientation programs for new federal judges and members of Congress.¹

The prototype training session for agency regulators was a 2 1/2 day seminar conducted by the Administrative Conference (ACUS) for newly appointed members of independent regulatory commissions in October 1977. The "Regulatory Agency Management Seminar" (RAMS) was held in Charlottesville, Virginia at the Federal Executive Institute. It had the formal endorsement of the Carter Administration² and attracted Chairs and Commissioners from virtually all the multi-member regulatory commissions. Although quite successful, future Administrations were less interested and ACUS has since conducted less ambitious one-day seminars for agency commissioners.

The Training Agenda

The 1977 ACUS RAMS program focused on two primary topics: the external relationships of regulatory agencies and the internal management of collegial agencies. [The entire agenda is attached.]

¹The background report draws heavily from an article by Adler, Klitzman and Mann, "Shaping Up Federal Agencies: A Basic Training Program for Regulators," Journal of Law and Politics, Vol. VI, No. 2, Pages 343-371 (Winter 1990).

²Including approval by the then-Civil Service Commission (now OPM) required by the Government Employees Training Act (5 U.S.C. §§4101-4118).

Among the external relationships addressed were:

- a) Coordination with other federal agencies in the promulgation and implementation of policies which cross jurisdictional lines;
- b) Congressional control mechanisms, such as appropriations, oversight and investigatory hearings;
- c) Relationships with the President, Office of Management and Budget and other Executive Departments and agencies;
- d) Role of the courts in review of agency actions;
- e) Role of and cooperation with the Administrative Conference;
- f) Interaction with State and local governments;
- g) Relationships with regulated industries and public groups; and
- h) Relationships with the press.

Among the management technique topics were:

- a) Regulatory agency role and organization, including the collegial relationships between chairmen and members;
- b) Personnel management;
- c) Budget process;
- d) Program planning and priorities assessment;
- e) Allocation of agency resources to effectuate policy;
- f) Management of program evaluation;
- g) Criteria for assessing agency performance and efficiency;
- h) Delegation of authority;
- i) Policy formulation and the rulemaking process;
- j) Administrative Procedure Act;
- k) Agency initiation of legislation;
- l) Codes of ethics, conflicts of interest, and *ex parte* problems;
- m) Government in the Sunshine Act, Freedom of Information Act, the Privacy Act, and public participation; and
- n) Regulatory reform.

Most, if not all, of these topics remain relevant. Additional topics that have become important in the 1990's include (1) implementation of National Performance Review recommendations, (2) a more specific emphasis on interaction with OIRA, (3) use of alternative dispute resolution and reg-neg, (4) potential benefits and problems with use of new information technology in regulation, (5) how to undertake cost-benefit analyses, (6) risk assessment/management, (7) Federal Advisory Committee Act, (8) Paperwork Reduction Act, (9) Regulatory Flexibility Act, (10) Government Performance and Results Act of 1993, (11) administrative law judges, (12) improved regulatory science, and (13) avoidance of unfunded mandates.

Logistical Details

It is premature to delve too deeply into the logistical details of the proposed training. Among the issues to be addressed, however, include:

- a) Content and structure of program curriculum
- b) Selection of resource organization (ACUS, with help of contractor?)
- c) Selection of participants (Presidential appointees to independent regulatory commissions; heads of regulatory agencies, including those within departments; certain key program officers?)
- d) Selection of discussion leaders/panelists
- e) Site location (Inside or outside Washington; government facility?)
- f) Length of seminar program (1,2,2 1/2 days; late Thursday - Saturday PM?)
- g) Program funding (Participating agencies chip in through Economy Act transfers to ACUS?)
- h) Instructional techniques
- i) Post-seminar evaluations
- j) Frequency of such seminars

Proposal: That the Regulatory Working Group establish a task force of its members to work with the Administrative Conference to explore the feasibility of planning a training seminar modeled generally on the RAMS program, but opened up to a larger audience of Presidential regulatory appointees.

REGULATORY WORKING GROUP

Thursday March 31, 1994

Agenda

- Update on Recent Conferences
 - Conference on the Impact of Regulation on Small Business (3/17)
 - 2nd Conference on Federal/State/Local/Tribal Regulatory Partnership (3/23)
 - Meetings with Agencies
- Executive Order 12866 Implementation
 - Review of Existing Significant Regulations
 - Administrator's May 1st Report to the President
 - Vice President's April 5th Meeting with Agency Heads
 - Streamlining Agency Procedures *(9/30 memo) due 3/31/94*
- RWG Sub-Groups Reports
 - Streamlining Internal Agency Regulatory Processes
 - Use of Information Technology to Improve Rulemaking
 - Cost Benefit Analysis
 - Risk Assessment Guidelines
- ACUS Training
- Announcements/Housekeeping

**SBA/OIRA BUSINESS FORUM ON REGULATORY REFORM
INDUSTRY WORK GROUP SCHEDULE**

Chemicals and Metals

March 18	9:30 - 12:00
March 31	1:00 - 4:00
April 14	2:00 - 5:00
April 18	1:00 - 4:00

Environmental/Recycling Waste

April 5	2:00 - 4:00
April 15	2:00 - 4:00
April 29	2:00 - 4:00

Food Processing

March 24	2:00 - 4:00
April 11	2:00 - 4:00
April 25	2:00 - 4:00

Restaurants

March 31	10:00 - 12:00
April 15	10:00 - 12:00
April 28	10:00 - 12:00

Trucking and Transport

March 30	2:00 - 4:00
April 13	2:00 - 4:00
April 27	2:00 - 4:00

All sessions will be held at the Small Business Administration, 409 Third Street, S.W., Washington, DC, in the Eisenhower Conference Center on the 8th Floor, with the exception of the April 11 Food Processing session, which will be held in the 5th floor conference center.



General Services Administration
Office of Administration
Washington, DC 20405

March 21, 1994

MEMORANDUM FOR COMMITTEE MANAGEMENT OFFICERS

FROM: JAMES L. DEAN, DIRECTOR *James L. Dean*
COMMITTEE MANAGEMENT SECRETARIAT

SUBJECT: **Application of the Federal Advisory Committee Act (FACA) to Intergovernmental Contacts**

This memorandum provides guidance regarding the applicability of the Federal Advisory Committee Act (FACA) to contacts between the Federal Government, and State, local, and tribal governments. We are providing this information to you as requested by the Office of Information and Regulatory Affairs (OIRA), Office of Management and Budget (OMB).

While FACA's scope encompasses many contacts between Federal officials and individuals who are not full-time employees of the Executive Branch, it does not extend to all such interactions. Circumstances will require the application of the Act in some situations; however, there are many instances where it will not be necessary to establish advisory committees. In determining the applicability of the Act to your specific needs, you should consult GSA's regulations located at 41 CFR Part 101-6 and your agency's Office of General Counsel. Some of the most frequently raised questions involving contacts with individuals who are not full-time employees of the Federal Government are discussed in this memorandum.

I. BACKGROUND

President Clinton recently announced several initiatives to promote more effective intergovernmental cooperation in the development and implementation of Federal regulatory actions. These efforts are the result of recommendations issued as part of the National Performance Review lead by Vice President Gore, as well as the Administration's commitment to streamline the Executive Branch's regulatory review process and encourage more direct interaction with entities affected by Federal policies.

Executive Order 12866

Executive Order 12866 of September 30, 1993, entitled "Regulatory Planning and Review," encourages agencies to seek to "harmonize Federal regulatory actions with related State, local, and tribal regulatory and other governmental functions." Each agency is directed to "explore and, where appropriate, use consensual mechanisms for developing regulations, including negotiated rulemaking." No specific approach for the accomplishment of



these goals is required, but the directive states it should be an "effective process" dictated by the order and magnitude of the issues involved.

Executive Order 12875

Executive Order 12875 of October 26, 1993, entitled "Enhancing the Intergovernmental Partnership," was issued to reduce the imposition of nonstatutory unfunded mandates upon State, local, and tribal governments. The Order directs each agency to establish a meaningful and timely mechanism for consultation with these affected parties in the development of regulatory proposals containing significant nonstatutory unfunded mandates.

On January 11, 1994, the Administrator of OIRA issued detailed guidance covering the scope, nature, and timing of intergovernmental contacts incident to the implementation of E.O. 12875. While agencies have been given broad latitude to determine which combination of tools to employ in accomplishing the President's goals, including the use of negotiated rulemaking advisory committees, they are required to integrate their activities into the ongoing regulatory process defined by E.O. 12866.

II. INTERACTIONS SUBJECT TO FACA

The use of Federal advisory committees, subject to FACA, in accomplishing the goals outlined by E.O. 12866 and E.O. 12875 is one option in developing an effective process for facilitating intergovernmental coordination. While the Administration encourages the appropriate use of advisory committees to accomplish rulemaking, the establishment of new advisory committees is subject to review by OMB under the terms of Executive Order 12838 of February 10, 1993, entitled "Termination and Limitation of Federal Advisory Committees," and GSA as required by the Act.

The following situations will require agencies to comply with FACA and E.O. 12838:

(A) Negotiated Rulemaking Committees. The use of advisory committees to accomplish rulemaking in selected circumstances has been effectively employed by several agencies, including the Department of Transportation and the Environmental Protection Agency. Advisory committees may be used to accomplish rulemaking where there is a clear need to obtain advice and recommendations while developing a Federal regulatory or other position in a relatively short timeframe. Such committees are subject to FACA as required by the Negotiated Rulemaking Act.

(B) Use of Existing Advisory Committees. As part of its overall regulatory strategy, agencies may require supplemental advice and recommendations to support ongoing activities. In such cases, the membership and/or structure of existing advisory committees may be expanded or modified to obtain additional information. While consultation with GSA is required to amend the charter of an existing FACA committee, the additional review requirements of E.O. 12838 do not apply if the scope of the original committee is not significantly altered.

Regulations promulgated by GSA provide substantial flexibility in addressing the operating requirements of existing advisory committees, including subgroups created to achieve their goals. For example, section 101-6.1004 provides a detailed listing of committee meetings or groups which are not covered by FACA and/or other regulatory requirements.

(C) General FACA Coverage. In determining coverage under FACA, agencies must continue to apply a "totality of circumstances" analysis against the functions to be performed by an individual or group providing advice or recommendations. Since the Act's scope is quite broad and based upon the functions to be performed, various factors such as the desire for consensus, frequency of meetings, or rotation of membership individually may not determine coverage. Accordingly, the application of FACA to specific circumstances should be reviewed with GSA, and the agency's Committee Management Officer and Office of General Counsel.

III. INTERACTIONS NOT SUBJECT TO FACA

As part of the regulatory process, agencies may receive unsolicited requests from pre-existing external organizations, including industry associations or associations of State, local, or tribal officials, to express their views. Conversely, the Government may seek to obtain information from such groups to achieve maximum participation in the decisionmaking process. There are several avenues for obtaining advice and recommendations from such groups which are not subject to FACA. The extent to which these types of interactions are not subject to the Act have been addressed in GSA's governmentwide regulations implementing FACA and recent Court decisions, and are summarized below.

(A) Meetings With Pre-Existing External Groups. From time-to-time agencies may receive unsolicited requests from pre-existing external groups to provide their views on pending actions. Such meetings, whose primary purpose is to present to the Government the views of the group on a particular matter are not subject to FACA. Similarly, the Executive Branch may under certain circumstances initiate meetings with pre-existing external groups for the purpose of obtaining views and information without applying the Act.

Exempting such meetings with pre-existing external groups from FACA assumes that the Government has not encouraged, promoted, funded, or otherwise controlled the creation and/or activities of the group being consulted. Accordingly, such interactions may be subject to FACA if these factors are present, even though the group existed previously.

(B) Meetings with Individuals. A meeting between an individual and Federal official(s) is not covered by FACA [see 41 CFR 101-6.1004(h)].

(C) Meetings with a Group of Individuals. Meetings with a group of individuals for the purpose of obtaining *individual opinions*, rather than *advice or recommendations as a group*, are not covered by FACA [see 41 CFR 101-6.1004(i)]. However, such a group may be covered by the Act if it is relied upon as a *de facto advisory committee* over a period of time, e.g. if the agency asks the group to prepare advice or recommendations, or its activities for all intents and purposes assume the appearance of an advisory committee as defined by the Act.

For example, as part of the regulatory process, an agency may choose to use a series of "focus groups," "forums," or "roundtables" to obtain the views of individual attendees. Such mechanisms serve as useful conduits for obtaining a broad range of information required to achieve a complete regulatory analysis. Typically, this approach involves a series of sessions structured to obtain information *from individuals*, and attendees are rotated to provide a diversity of viewpoints.

(D) Public Meetings. Public or "town" meetings which are open to all interested parties for the purpose of exchanging views and information are not subject to FACA. Such meetings are frequently used by many agencies as a means of collecting a wide range of opinions in a short period of time. Often public meetings, "hearings," or "town meetings" are widely advertised and include invitations for both oral and written input into an agency's decisionmaking process.

IV. SUMMARY AND CONCLUSION

Establishing an effective and meaningful intergovernmental dialogue as part of the Administration's efforts to reduce nonstatutory unfunded mandates and streamline the regulatory review process will require the use of several approaches, including advisory committees. Agencies having specific questions or concerns regarding advisory committees may contact GSA's Committee Management Secretariat at (202) 273-3556.

cc: Office of Information and Regulatory Affairs
Office of Management and Budget (OIRA/OMB)



MEMBER

EXECUTIVE OFFICE OF THE PRESIDENT

COUNCIL OF ECONOMIC ADVISERS

WASHINGTON, D.C. 20500

March 31, 1994

REVISED

MEMORANDUM FOR REGULATORY POLICY OFFICIALS

FROM: STEPHEN H. KAPLAN, DOT
JOSEPH E. STIGLITZ, CEA

SUBJECT: Plans for Cost-Benefit Subgroup

The Cost-Benefit Subgroup of the Regulatory Working Group will hold its first meeting on Tuesday, April 12, at 2:00 PM in Room 324 of the Old Executive Office Building.

The Subgroup will have several goals:

- (1) update the general OMB guidance documents on cost-benefit analysis;
- (2) develop or update corresponding agency-specific guidance documents;
- (3) provide a forum for discussing issues related to the conduct of cost-benefit analysis--including methodological issues, data issues, agency resource issues, and the role of cost-benefit analysis in agency decisionmaking;
- (4) develop ways of increasing professional contact among cost-benefit analysts across agencies; and
- (5) help senior agency officials deepen their understanding of the value of cost-benefit analysis.

Each agency should be represented by a senior official with substantial policymaking responsibility for regulatory matters (such as the regulatory policy official) and a senior cost-benefit analyst (such as the head of the office that conducts analyses). If an agency has more than one independent office conducting cost-benefit analyses (as with the Department of Transportation's National Highway Traffic Safety Administration and the Federal Aviation Administration), it may send two senior analysts. Please call Mary Thomas at 202-395-6867 with the name and date of birth of those who will be attending so that clearance can be arranged.

In preparation for the first meeting, each agency (or office) is requested to develop a memorandum listing the two or three substantive issues related to the conduct of cost-benefit analysis that it finds most troublesome, and listing any major concerns it has with the current OMB guidance document. Agencies are also encouraged to suggest an approach for addressing these issues. This memorandum should be faxed to Stiglitz at 202-395-6947 by Thursday, April 7.

COMMITTEE ON RISK ANALYSIS

REGULATORY WORKING GROUP

Co-Chairs

John H. Gibbons, Assistant to the President for Science & Technology
Robert M. Sussman, Deputy Administrator, Environmental Protection Agency

Support to Co-Chairs

Mark Schaefer, Assistant Director for Environment, OSTP
Lynn Goldman, Assistant Administrator, Prevention, Pesticides, & Toxic Substances, EPA

Represented White House Offices & Agencies

Council of Economic Advisors
Domestic Policy Council
National Economic Council
Office on Environmental Policy
Office of Management and Budget
Office of Information and Regulatory Affairs
Office of Science and Technology Policy
Office of the Vice President

Department of Agriculture
Department of Commerce [to be added]
National Oceanic and Atmospheric Administration [to be added]
Department of Defense
Department of Energy
Department of Health and Human Services
Food and Drug Administration
Department of Housing and Urban Development [to be added]
Department of Interior
Department of Labor
Occupational Safety and Health Administration
Consumer Product Safety Commission
Environmental Protection Agency
Federal Emergency Management Agency
National Science Foundation
Nuclear Regulatory Commission

Purpose of the Committee

The Committee is responsible for evaluating issues and devising policy with respect to the use of risk analysis in the regulatory decision-making process. This involves a variety of activities in the risk area including evaluating legislative proposals, working to ensure appropriate statutory consistency, and examining broad agency policies and procedures. Risk issues within the domain of the committee include health, safety, ecological, natural hazards, engineering, and other risks.

The Committee will periodically provide the Regulatory Working Group suggestions for improving federal risk policies and will disseminate information to departments, agencies, and White House offices.

Activities to Date

The current committee evolved from an earlier ad hoc White House and interagency working group chaired by Jack Gibbons and Sally Katzen. This group met on several occasions to discuss broad risk policy issues and to develop a series of basic principles to guide agency activities in this area. The principles, which are still evolving, focus on four major aspects of risk analysis: risk assessment, risk management, priority setting using risk analysis, and risk communication.

Potential Future Activities

The Committee may undertake a number of tasks, including:

- Develop an Administration strategy for addressing risk issues that is scientifically sound and, where appropriate, consistent across agencies;
- Evaluate legislative proposals and strategies broadly related to risk policy;
- Interact with the Subcommittee on Risk Assessment within the Committee on Environment and Natural Resources of the National Science and Technology Council, which is charged with considering scientific aspects of risk analysis;
- Evaluate statutory provisions that require or limit the use of risk analysis and promote consistency across statutes;
- Evaluate and compare the current use of risk in making policy decisions across agencies;

- Explore the feasibility and potential utility of comparing risks within and across agencies;
- Provide guidance to agencies on the appropriate use of risk in making policy decisions;
- Identify and address key, high-leverage, cross-cutting issues on specific risks of interagency concern;
- Actively promote effective two-way communication about risk among stakeholders in the public and private sectors; and
- Evaluate the status of data and methods of risk analysis relevant to regulatory issues, including the adequacy of research programs.



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

OFFICE OF INFORMATION
AND REGULATORY AFFAIRS

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FAX TRANSMITTAL

DATE: 11/12/93

TIME: 5:10pm

TO:

John Podesta

FROM:

Sally Katzen

TOTAL NUMBER OF PAGES INCLUDING THIS COVER SHEET: 2

RECIPIENT'S FAX NO.:

456-2215

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Mona Wang

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395-7340



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

MEMORANDUM FOR REGULATORY POLICY ADVISORS

FROM: Sally Katzen *S. Katzen*
Administrator
Office of Information
and Regulatory Affairs

Subject: First Meeting of the Regulatory Working Group

The first meeting of the Regulatory Working Group will be held in the Vice President's Office in the Old Executive Office Building, Room 274, from 9:00 to 11:00 a.m. on Tuesday, November 30, 1993.

As you will recall, the President issued Executive Order No. 12866, "Regulatory Planning and Review," on September 30, 1993. Section 4(d) of the Order requires the Administrator of OIRA to convene a Regulatory Working Group, which is to consist of representatives from agencies with significant domestic regulatory responsibilities, the President's Regulatory Policy Advisors as defined in Section 3(a) of the Order (which includes you), and the Vice President.

The Regulatory Working Group will serve as a forum to assist agencies in identifying and analyzing important regulatory issues. It will provide a means by which we can share information, develop strategies to deal with common regulatory problems, and develop better means of coordinating with one another. This first meeting will be devoted to a discussion of the role of the Group within the regulatory planning and review framework created by Executive Order No. 12866. Your suggestions for subjects to be considered by the Group will be most welcome.

I look forward to seeing you on the 30th. We have a unique opportunity to launch a process that can significantly help the Administration's goal of reforming, improving, and streamlining our regulatory system.

Please let my office know as soon as possible if you will be able to attend so that proper arrangements can be made. Contact Phyllis Kaiser-Dark at 395-4852.

PHL
Can you go?
I'll be out of town



ADMINISTRATIVE CONFERENCE OF THE UNITED STATES

2120 L STREET, N.W., SUITE 500

WASHINGTON, D.C. 20037-1568

(202) 254-7020

February 14, 1994

94 FEB 16 P3:14

OFFICE OF
THE CHAIRMAN

The Honorable John D. Podesta
Assistant to the President and
Staff Secretary
The White House
1600 Pennsylvania Avenue, N.W.
Washington, D.C. 20500

Dear John:

I am writing to you in your capacity as co-chair of the Regulatory Working Group's Task Force on the Use of Information Technology to Improve Rulemaking.

As you know, ACUS has several initiatives under way relating to this general subject, including our NPR Reinvention Lab on E-Mail ADR, and our preliminary agreement with representatives of NRC to jointly sponsor a pilot electronic reg-neg using the NRC's high performance computing capabilities. This effort is now awaiting Commission approval.

Given these activities and our long involvement in reg-neg issues, I would like to volunteer some assistance to your task force. If you are accepting staff help from Regulatory Working Group member agencies, I would like to volunteer the time of David Pritzker, senior staff attorney and resident reg-neg expert to your group. Please let me or David know whether you would like David to attend meetings of your task force or assist in any other way.

Sincerely yours,

Jeffrey S. Lubbers
Research Director

JSL/sda

cc: Sally Katzen
David M. Pritzker

THE ELECTRONIC AGENCY AND THE TRADITIONAL PARADIGMS OF ADMINISTRATIVE LAW

Henry H. Perritt, Jr.*

INTRODUCTION

Electronic information technology will change administrative agency structures and application of traditional administrative law concepts.¹

*Professor of Law, Villanova Law School; Member of the Bar, Virginia, Pennsylvania, District of Columbia, United States Supreme Court; Chair, Section on Law and Computers, Association of American Law Schools; Chair Committee on Regulatory Initiatives and Information Technology, Section on Administrative Law and Regulatory Practice, ABA. This article grew out of a paper prepared while the author was a Fellow at the Center for Business and Government of the Kennedy School of Government at Harvard University during the fall semester, 1990. The author appreciates intellectual assistance from John T. Dunlop, David R. Johnson, Marc Lauritsen, Catherine Lanctot, and students in the author's class in Administrative Law at Villanova Law School, fall semester, 1991.

1. The phenomenon is not limited to administrative agencies. See generally James I. Cash & Benn R. Konsynski, *IS Redraws Competitive Boundaries*, 63 HARV. BUS. REV., Mar.-Apr. 1985, at 134 (penetration of information systems into internal business processes); Benn R. Konsynski & F. McFarlan, *Information Partnership: Scale Without Ownership* (HARV. BUS. SCH. Case N1-191-023) (information technology allows enterprises to cooperate in new ways). Private sector organizations draw their boundaries so as to minimize the transaction costs of production and coordination. Costs of production are minimized by vertical integration when firms can realize Minimum Optimal Scale within the firm. Minimum Optimal Scale (MOS) is the smallest size of a production unit at which all of the economies of scale can be realized. They buy from other firms when their own needs are not sufficient to utilize fully an MOS-size operation for that factor of production. MIT Sloan School Professor Thomas Malone calls transaction costs outside the firm "coordination costs."

Historically, coordination costs were relatively high and remained high as improved technology reduced production costs. This created an incentive to move more and more production activities within the firm; in other words it created incentives for more vertical integration.

Now, technological innovation promises greater rewards with respect to coordination costs than to production costs. Computer and digital communications technologies now make feasible various forms of electronic coordination, particularly electronic contracting and its close cousin Electronic Data Interchange (EDI). As EDI is introduced more widely, the expectation is that economically rational firms will draw in their boundaries, reducing the average size of firms. In other words, more economic activity will occur in the marketplace rather than within vertically integrated firms.

These ideas cannot be applied directly to governmental entities. Governmental entities exist for purposes other than production efficiency. Agency survival and growth is determined by factors other than market share and profit. Accordingly, there is no reason to

Governments are increasing their use of digital electronic information technologies to acquire information from private entities, to process it internally, and to disseminate it to the public.² Interest in electronic forms of public information is growing rapidly, as the SEC, the IRS and the federal tariff agencies begin to require electronic filings; as more government information is available for release to the public in electronic form; and as agency management practices change because of electronic mail and electronic records management.

This article assesses the impact of electronic information technology on three traditional goals of administrative procedure: efficiency, participation, and formality (judicial reviewability). It concludes that adoption of electronic information technology for rulemaking, adjudication, internal management, and delivery of services advances virtually all of the traditional goals of administrative law.

1. Electronic information technology increases efficiency by permitting mechanical functions to be automated.

2. In the long run, adoption of information technology systems designed for flexibility can blur the boundaries between citizen and agency and between agency and court, furthering participation and individual dignity goals.

3. Blurring of these boundaries may necessitate rethinking the definitions of some of the basic events that define the administrative process, public participation and judicial review. Ultimately a balance must be struck between pursuit of participation goals and formality.

4. Electronic information technology can be implemented so as to make administrative procedure inflexible, but inflexibility can be avoided by proper system design.

5. Barriers to wider adoption of information technology result from misapplication of legal concepts and failure to appreciate the adaptability of the technologies to policy decisions about the goals of the administrative process.

In assessing the connection between electronic information technology and administrative law issues generally, it is useful to have a concrete idea of how a government agency might function once it takes full advantage of electronic information technology now available or reasonably expected to be available within five to ten years. Sketching the hypothetical uses of technology not only identifies problems for traditional paradigms of government and of information management, but also shows a mode of

conclude, based on the Williamson and Malone propositions, that digital electronic technologies will cause agency boundaries to contract. Greater use of the technologies can reduce external coordination costs, however, and it is external coordination costs that are involved in assessing efficiency of administrative procedure involving private parties.

2. See generally Administrative Conference Recommendation 88-10, 1 C.F.R. § 305.88-10 (1989) (recommending, among other things, experimentation with electronic rulemaking and adjudication).

governmental functioning that enhances citizen participation in governmental decisionmaking.

The hypotheticals involve four categories of agency decisionmaking: adjudication, rulemaking, management of agency resources, and delivery of services. The use of electronic information technology is somewhat different in each category. Adjudication involves the application of a pre-existing rule to a particular case. Rulemaking involves the formulation of new standards for application in later adjudications as pre-existing rules. There is a loose correspondence between the categories of adjudication and rulemaking in administrative law, and the categories of contract administration and contract formation in contract law. Rulemaking and contract formation define a relationship, establishing standards for the first time. Contract administration, like adjudication, applies the standards to particular conduct.

After the first step of defining the hypothetical applications, the second step is to identify any mismatches between these applications and existing administrative law concepts. Then, third, one can consider what legal paradigms should be modified to permit this kind of operation. The modifications may involve changes in statutory law, or simply changes in the way one thinks about applying existing statutory law. Fourth, one should consider what changes in the paradigms are undesirable for policy reasons. Fifth, one should consider the degree to which the technology can be adapted to the legal paradigms that would remain or would be created for policy reasons. Sixth and finally, one should consider whether what remains of the technology after its adaptation to the policy-based paradigms is worth implementing.

STATE OF THE ART

The four visions of agency technology sketched in this article are not fanciful. Many aspects of the visions have been put in place, and certain policy and legal issues already have gained prominence.

A number of agencies have committed themselves to large-scale electronic filing programs. These programs encourage or require private entities to submit material to the agencies in electronic form. The Securities and Exchange Commission's EDGAR system is a prominent example. EDGAR, by the time it is fully implemented in about 1993, will require all public corporations subject to the federal securities laws to file their quarterly and annual reports and their prospectuses with the SEC in electronic form. The SEC provides two streams of access to the database resulting from the electronic filings, one on an unrestricted basis to the SEC analysts, and the other on a more restricted basis to the public via a number of competing value-added information retailers. The Internal Revenue Service now is processing more than two million individual income tax returns filed electronically by third-party preparers under the IRS's Electronic Filing

Project. The three federal tariff agencies—the Federal Maritime Commission, the Interstate Commerce Commission, and the Department of Transportation—have committed themselves to electronic filing of freight and passenger tariffs. The Energy Regulatory Commission requires that certain applications and evidence be filed electronically.³ The Coal Commission required electronic filing of comments.⁴ While these programs are different from each other in the data structures used, the statutory authority involved, and the implementation schedule, all involve some of the issues addressed in this article.

Perhaps the most interesting model of future relationships is represented by the approach taken by the Department of Transportation to airline tariffs. Under the DOT approach, airlines, which are required to file tariffs with DOT and make them available to the public, can satisfy these requirements by affording to DOT and to the public electronic access to a database in an airline-controlled computer.⁵ This initiative is a clear example of how boundaries between agency and regulator, and agency and public can be blurred by electronic technology.

VISIONS OF THE FUTURE

Electronic Adjudication and Enforcement

In electronic adjudication, hearing and pretrial procedures would all be electronic. Recordkeeping and filing obligations imposed in aid of enforcement⁶ also would be electronic as in EDGAR and the IRS Electronic Filing Project. The rare exception would be a contested matter in which the credibility of witnesses is at issue. Even videotaped depositions could be taken in advance, digitized, and presented to the administrative law judge through hypermedia electronic filing and database techniques.⁷ For ease in discussion, the computer systems for electronic adjudication can be called the Adjudication Management System (AMS). A case would be started by a private party by filing a complaint in electronic form in an electronic mailbox, the number and address of which would be posted in an electronic directory. The initial complaint might be structured according to an EDI-

3. 18 C.F.R. § 154.1-.310 (1991) (FERC filing requirements).

4. See Meeting Notice, 55 Fed. Reg. 33,390 (1990) (submissions to Advisory Commission on United Mine Workers Retiree Health Plans (Coal Commission) required to be on floppy disk unless hardship shown). The author was Vice Chairman of the Coal Commission.

5. 14 C.F.R. §§ 221.251, 389.20 (1991) (rule permitting airlines to file passenger fare tariffs electronically).

6. Recordkeeping and filing (reporting) are grouped with adjudication because all three involve individual compliance with pre-existing rules. Recordkeeping and filing produce raw materials from which adjudicatory enforcement proceedings may spring.

7. These techniques permit information of different kinds, in significantly different formats, to be linked together. Thus, a voice recording, a full-motion video image and a textual discussion could be combined.

like transaction set⁸ so that preliminary processing steps could be taken without human intervention: setting up a docket entry, sending notices to opposing parties, and classifying the type of case involved. If the government commences the proceeding, it would give notice by sending an electronic citation to the published electronic mailbox address of the respondent. Regulatees might be obligated to have electronic mailboxes, much as corporations presently are required by state law to have agents for service of process.

Proof of service of the private complaint or government citation would be automatic when the respondent retrieves it from the respondent's mailbox. Any further pleading stages would occur electronically. As a new fact is asserted, AMS would open a new record in a table of a database devoted to the matter in adjudication. AMS would prompt the respondent for answers to newly asserted facts and would set the value of fields in the appropriate records according to the respondent's position. There is no reason that discrete pleading events need be defined as in the past (complaints, answers, and new matter); facts could be asserted seriatim and answered seriatim within certain time limits. As Harvard Business School Professor Benn Konsynski cautions, the new technology should not be used simply to "speed up the mess."

As pleading proceeds, the AMS would automatically identify facts as to which there is dispute and those that are established by the pleadings. Discovery would proceed as to disputed facts. Each interrogatory would open a new database record, much as a newly pleaded fact opens a new record. Responses to interrogatories would set values of fields in the appropriate records. To the extent that interrogatories are framed in a yes or no or multiple choice format, the answers would be machine-processible. AMS would prepare a pretrial memorandum for the hearing officer automatically, listing the disputed facts. Proffers of evidence would be submitted in a structured form so as to fill fields in records identified with the particular factual issue. If live testimony is taken either before the ALJ or in a deposition, an electronic transcript would be prepared and scanned (necessitating some human intervention) to disaggregate the transcribed testimony of each witness into the factual issues to which it pertains. As multimedia technologies develop further, deposition videotapes could be digitized and placed in the same database in the same fashion.

Tentative legal conclusions could be drawn automatically on some issues by rule-based software that "knows" what facts must be established to establish a valid claim under the applicable statute. Counsel could have notice of impending legal conclusions automatically, much as counsel have notice of proposed Findings of Fact and Conclusions of Law before they become

8. Electronic Data Interchange (EDI) is the practice of exchanging contractual documents in electronic form. An EDI "transaction set" is a data structure or template for an electronic contract form like a purchase order.

final under judicial procedural rules⁹ and practice in most courts. This notice would be given automatically and electronically. All of this could occur wherever counsel and witnesses are located, with no need for counsel, witnesses, and hearing officer to be in the same place at the same time. They would communicate and exchange information via electronic links.

Rulemaking

Automating the rulemaking category of government decisionmaking has even greater potential to change the way in which government operates because rulemaking as a quasi-legislative process is concerned with policy making and is supposed to involve whatever public is concerned with a particular policy. Electronic information technology greatly facilitates timely public involvement and reduces burdens on agencies affording that involvement.

An agency would commence a rulemaking by publishing a notice in an electronic federal register. The electronic federal register would not be set up chronologically like the paper *Federal Register*; it would be a database organized rather like a modern-day regulatory agenda by topic within the jurisdiction of the different agencies. When an agency envisions a change in policy, it would post a notice under the appropriate topic in the electronic *Federal Register*. Agencies would structure their proposals so as to identify discrete issues on which comments are to be received, and the database would be organized accordingly. Interested parties could begin to comment immediately, by sending electronic messages to the database.¹⁰ Their messages would be structured according to an EDI-like transaction set, identifying the particular issue commented on, the author of the comment, and the interest represented. To the extent that issues are framed by the agency in terms that could be answered yes or no or answered by choosing one of several discrete choices, comments could be processed automatically and tallied automatically. Free-form comments also would be accommodated. As comments are received, the agency could post notices responding or raising new questions. The electronic rulemaking would be a kind of running dialogue among an agency and interested parties.

When a decision is made, that decision would appear in the database and the Rulemaking Management System (RMS) would apply electronic delegations of authority to ensure that the purported decisionmaker has the requisite authority. The RMS database would ensure that the decision is automatically communicated¹¹ to the compilers of annotated codes, such as WESTLAW and LEXIS.

Proposals or petitions for rulemaking activity would be submitted elec-

9. See FED. R. CIV. P. 53 (providing for notice of master's proposed findings and conclusions).

10. The electronic interface with the database would be an electronic bulletin board, accessible through dial-up telephone links and modems.

11. The text envisions an object-oriented approach in which the object "final rule" would, when activated, trigger various electronic publication procedures.

tronically and posted in the appropriate database table of the electronic regulatory agenda. Requests for interpretation of regulations similarly would be submitted and posted electronically, with agency responses posted in the same place. Thus, a citizen wishing to find agency rules on a particular subject simply would retrieve the material from the regulatory agenda database by topic and would see not only the text of the regulation, but also pending regulatory action and interpretations of existing regulations.

The electronic record of a particular rulemaking decision would be all of the entries in the appropriate table of the RMS database. The record on petition for judicial review would be a set of electronic pointers to appropriate places in the table.¹² A reviewing court simply would access the appropriate table through the pointers.

Internal Agency Management

Internal agency management can be automated by integrating database and electronic mail technologies, making both easily accessible on desktop computers for all agency personnel. Electronic management¹³ would relax the need for official paper documents to record and communicate instructions and decisions to lower levels in the organization. Rather than signing a new delegation of authority, a memorandum making a change in organization structure, or a directive reallocating enforcement resources, an agency head would post a notice directly from his or her desktop workstation, electronically changing a database record. The state of the organization, of delegations of authority, and of resource allocations would be defined officially by the state of the database.

Delivering Services

The fourth electronic vision is that of electronic delivery of governmental services, such as electronic dissemination of public information, and electronic transfers of money in connection with public welfare and subsidy programs. Electronic food stamps, direct deposit of social security checks, and electronic management of Medicare and Medicaid benefits are all examples. Such electronic information technology applications use well-proven electronic funds transfer techniques, combining them with EDI standards in the case of Medicare reimbursement.

The electronic food stamps program is worth considering in some detail. The Electronic Benefit Transfer (EBT) Alternative Issuance Demonstra-

12. The component of the database associated with a particular rule could be thought of as a record. As one considers adding more and more to the file for a particular rule, however, it may be more appropriate to think of the file for a particular rule as a table containing many records, in which case the regulatory agenda for a particular agency would be a database composed of many tables.

13. One could view management of agency resources as a weak form of rulemaking and adjudication, not involving the same degree of legal formality aimed at ensuring political accountability, but involving the same types of decisionmaking processes.

tion Project was developed by the USDA in July of 1983.¹⁴ The program was developed to test the application of electronic funds transfer technologies to the delivery and control of food stamp benefits. Pilot testing began in October 1984 within a limited area of Reading, Pennsylvania, and presently is continuing on an expanded basis through 1992.

EBT is aimed at eliminating paper food stamps, relying instead on electronic transfer of benefits to recipients and redemption for retailers. Eligible households are issued uniquely identified access devices resembling credit-type cards in lieu of food coupons. At a store the beneficiary pays for eligible food items at the point of sale by electronically transferring program benefits from the participant's food stamp account to the retail grocer's credit. The participant's account is automatically debited by the amount of the purchase made.

Varying means of recipient identification are being considered under proposed systems, all of which use a Personal Identification Number (PIN), which the recipient would enter on a number pad at the point of sale.¹⁵ The recipient must establish that he or she is entitled to the benefits and the retailer will be responsible for denying purchases if this cannot be established.¹⁶

Recipients can obtain their account balances any time of the day by calling a local number and entering their case number and PIN. A synthesized voice then provides the household's account balance in either English or Spanish, depending on the arrangement made with the state agency. In addition, following each purchase, households receive a receipt that documents the purchase amount and the account balance after the purchase. Households receive detailed training on these and other aspects of the new system prior to or at the time of their initial certification. Follow-up training is also available for those having problems with any system feature.¹⁷

USDA demonstration projects continue under varying contractor and federal/state partnerships.¹⁸

Electronic dissemination of public information is another type of government-service delivery worth discussing in some detail because of a relatively mature debate and a number of issues that involve blurring of traditional institutional boundaries.

The increasing availability of government information in electronic form, whether because it is filed that way or because agencies create and maintain it that way, has stimulated interest in releasing that information to the public in electronic form. The electronic filing and dissemination programs described earlier in this article are examples. In addition, some fifty agency

14. General Notice, 48 Fed. Reg. 31,431 (1983).

15. Households select their own PINs to facilitate easy recall. (The PIN may be any combination of four alphanumeric characters.)

16. 48 Fed. Reg. 31,433 (1983).

17. Amended General Notice, 49 Fed. Reg. 33,153 (1984).

18. Meetings Notice, 55 Fed. Reg. 49,661 (1990).

bulletin boards have been established to provide public access to agency information on a dial-up basis.¹⁹ The American Library Association is promoting an initiative for an electronic network to distribute the contents of the *Federal Register* and the Congressional Record to libraries in electronic form.

The Fit Between Technology, Law, and Policy

The different reactions of people who read an earlier version of this article that presented the hypotheticals, or participated in a faculty seminar about it at the Center for Business and Government at the Harvard Kennedy School on November 15, 1990, were interesting. The economists (who dominated the Harvard seminar group) had two main concerns. First, they instinctively doubted the utility of formal procedures and thus liked any move toward greater informality. But they also were skeptical about the capacity of digital electronic technologies to provide the informality. They thought that there would be many cases in which an electronic form for adjudication, or an electronic template for rulemaking, would be unable to accommodate the real positions or arguments of the parties or to match these with considerations the agency ought to take into account.

Some of the lawyers felt it was too cold-blooded and neglected the dignity values associated with due process concepts. The lawyers also thought the earlier version was too cavalier in suggesting that the hallmarks of formal procedure might be changed by changing technologies.

The paper discussed at the Harvard seminar focused exclusively on efficiency and judicial review criteria embedded in the traditional model of administrative law. Lawyer reaction makes it appropriate to consider, in addition to the issues raised in that paper, procedural fairness in terms of dignity values as well as in terms of accuracy and efficiency values; and to probe more deeply the implications of choosing between formal and informal processes. On the one hand, shifting to digital electronic technologies makes administrative processes more formal because it limits the kinds of information that can be expressed and processed. A user cannot send information not accommodated by the electronic format, which may limit free-text expression just as paper forms with blanks and boxes to be checked limit expression. Conversely, shifting to digital electronic technologies may permit procedures to be less formal because it blurs the boundaries of agencies.

The distinction between formal and informal processes is hardly new. Professor Michelman, in his oft cited *Nomos* chapter,²⁰ addressed the distinction. He concluded that formal processes are aimed primarily at permitting post-decisional review by higher authority, while informal proc-

19. The text accompanying note 76 discusses Administrative Conference and ABA policy guidelines for electronic dissemination.

20. Frank I. Michelman, *Formal and Associational Aims in Procedural Due Process*, 18 *NOMOS* 126, 127-29 (J. Roland Pennock & John W. Chapman eds., 1977).

esses are aimed at promoting other values, generally falling into the dignity classification in more recent due process literature. Computer representation of information is generally thought to require greater formality in linguistic expression, but this does not necessarily mean more formality of procedure in the Michelman sense.

The following parts of the article revisit basic legal models of administrative law and consider how the visions of electronic agency methods sketched in the preceding section fit with the legal models.

Models of Administrative Law

Recent scholarship and case law emphasize three major goals for administrative procedure: formality, efficiency, and participation. Formality, aimed at facilitating judicial reviewability, is the major contribution of the New Deal formalist school.²¹ Efficiency is the Supreme Court's major contribution in *Mathews v. Eldridge*.²² Participation has received increased emphasis through broadened standing, increased use and scrutiny of notice and comment rulemaking, and scholarly emphasis on the dignity value in due process.

Formality and judicial reviewability ensure compliance with three subordinate goals, one of which replicates the participation touchstone.²³ First, administrative agencies should act only within authority delegated to them by the legislature.²⁴ Second, the public is entitled to participate.²⁵ Third, administrative agency decisions should be rational.²⁶ The requirement for decision rationality ensures agency faithfulness to relevant statutory norms

21. Judicial reviewability is the major artifact of the delegation doctrine. Delegation of legislative authority is constitutional as long as the Congress gives standards to guide exercise of the delegated authority that can be applied as meaningful constraints by the courts.

22. *Mathews v. Eldridge*, 424 U.S. 319, 347-49 (1976). See also *Nixon v. Administrator of Gen. Servs.*, 433 U.S. 425, 529 n.23 (1977) (Burger, J., dissenting) (the goal of administrative efficiency cited in *Mathews* is not the only consideration); *Dixon v. Love*, 431 U.S. 105, 114 (1977) (administrative efficiency and public interest in safe drivers permit suspending drivers license without prior hearing, citing *Mathews*, 424 U.S. at 347-49); *Wilkerson v. Sullivan*, 904 F.2d 826, 851 (3d Cir. 1990) (citing *Mathews* in support of observation that a certain number of errors must be tolerated in large and complex systems of claims adjudication).

23. *Citizens to Preserve Overton Park v. Volpe*, 401 U.S. 402 (1971), broadly represents the need for judicial review in order to police agency decisionmaking.

24. *A.L.A. Schechter Poultry Corp. v. United States*, 295 U.S. 495 (1935) (finding the National Industrial Recovery Act unconstitutional). See also *Panama Refining Co. v. Ryan*, 293 U.S. 388 (1935) (also finding the National Industry Recovery Act unconstitutional).

25. As noted in the discussion in the text, the goals of formality, efficiency and participation are not entirely independent. Each supports the others to some degree.

26. Professor Jerry L. Mashaw recently restated the dominant administrative law model as serving two major purposes: keeping administrators within their jurisdiction and faithful to the values and purposes expressed in legislation, and protecting, through procedural entitlement, participation in the "micropolitical processes" of administration. (The legislative and electoral processes are "macropolitical.") See Jerry L. Mashaw, *Explaining Administrative Process: Normative, Positive, and Critical Stories of Legal Development*, 6 J.L. ECON. & ORG. 267, 271-72 (1990). Judicial review is the lynchpin of the whole arrangement. *Id.* at 274.

and evidence of record.²⁷ Rationalizing decisions in terms of statutory norms ensures faithfulness to legislative policy. Rationalizing decisions based on evidentiary records ensures meaningful participation. To allow decisions to be based on matters not in the record risks making participation a sham.²⁸ Thus the rationality, delegation and participation principles converge.

Judicial review necessitates a "record" of agency decisionmaking. The boundary between judicial review and original agency decisionmaking is represented by two related rules: administrative remedies must be exhausted²⁹ and courts review only final agency actions.³⁰ The record, exhaustion, and final-agency-action requirements link judicial reviewability with procedural formality.

The efficiency goals largely determine adjudication and rulemaking requirements, although the participation goal also is an important constraint.³¹ Efficiency includes two sub-goals: accuracy in fact-finding,³² and cost-effective resource allocation.³³ The *Mathews v. Eldridge* formula evaluates adjudicatory entitlements by the marginal improvement in fact-finding accuracy resulting from each additional procedural ingredient and weighs this against the cost in agency resources of adding the step, taking into account the magnitude of the individual deprivation resulting from an error in the decisional process. The accuracy criterion is a gloss on the rationality requirement.

27. *Id.* at 274.

28. See *Home Box Office v. FCC*, 567 F.2d 9, 54 (D.C. Cir. 1977) (limiting ex parte contact in rulemaking).

29. *Federal Trade Comm'n v. Standard Oil Co.*, 449 U.S. 232, 243 (1980) (denying judicial review of nonfinal order despite exhaustion of administrative remedies; considering difference).

30. 5 U.S.C. § 704 (1988) (providing for judicial review of final agency action).

31. *Goldberg v. Kelly*, 397 U.S. 254 (1970) (procedures for contesting welfare termination violated procedural due process). Although *Goldberg* involved constitutional due process scrutiny of a welfare rights case, more broadly it stands for the need for certain minimal procedures in adjudication. The detailed adjudication requirements under the Administrative Procedure Act (APA) reflect constitutional due process concepts. Compare Henry J. Friendly, *Some Kind of Hearing*, 123 U. PA. L. REV. 1267 (1975) (constitutional procedural process) with 5 U.S.C. §§ 554-57 (1988) (statutory adjudication procedures). Rulemaking has more flexible procedural requirements. The rationality principle is applied to rulemaking through the arbitrary and capricious standard for judicial review. *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 844 (1984); *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 41 (1983). Participation in rulemaking can be ensured in a variety of ways practically aimed at giving the public notice of an intended policy change and an opportunity to comment. *Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519 (1978) (courts may not impose procedures on agencies beyond those required by Administrative Procedure Act).

32. Accuracy in fact-finding is essentially the same goal as rationality.

33. But see Paul R. Verkuil, *The Emerging Concept of Administrative Procedure*, 78 COLUM. L. REV. 258, 279-87 (1978) (emerging judicial support for a spectrum of procedural alternatives to serve values of fairness, efficiency, and satisfaction). Professor Verkuil's efficiency value considers only deciding cases cheaply and quickly. *Id.* at 280 n.113. His satisfaction value is close to the dignity value considered in the text. *Id.* at 280 n.3. His fairness value apparently takes into account accuracy. But see *id.* at 283 (quoting Frankfurter as endorsing fairness and satisfaction values, "feeling . . . that justice has been done").

The participation goal has emerged as a separate consideration relatively recently. Critics of the formality and efficiency goals urge giving greater emphasis to participation as a goal with greater utility than facilitation of judicial control.³⁴ They suggest reference to political science, which offers a more flexible perspective that acknowledges the role of political deals and unintended consequences.³⁵

A recently developed branch of political theory, based loosely on public choice, argues that administrative law is structured to permit winning political coalitions to enforce the bargains they persuaded legislatures to enact.³⁶ This model emphasizes legislative control more than judicial control.³⁷ The desire for legislative control combines with a desire to minimize transaction costs, to cause legislators to structure programs to empower others (usually the members of the winning political coalition) to monitor and enforce the bargain against the agencies.³⁸ This of course leads back to judicial review, because the courts are the usual instrument of enforcement. Congressional micromanagement of procedure, especially when it is aimed at limiting executive branch control, is evidence in favor of the public choice model.³⁹ Judicial control of course predominates, and to this extent the political science view overlaps the traditional formalist view.⁴⁰ The emergence of negotiated rulemaking as a new pattern of agency decisionmaking reflects the political science view of administrative law,⁴¹ placing participation at the center of rulemaking procedure. The legitimacy of negotiated rulemaking derives from effective participation by affected parties in developing rules.⁴²

Critical legal studies, while suspicious of all models, emphasizes a particular aspect of the participation goal: human dignity.⁴³ Critics urge, rather vaguely, efforts aimed at liberation, enhancing human freedom, and reor-

34. Mashaw, *supra* note 26, at 286; Richard Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1667 (1975) (interest representation model). See also Gerald E. Frug, *The Ideology of Bureaucracy in American Law*, 97 HARV. L. REV. 1277, 1297-1355 (1984) (criticizing formalist (delegation), expertise, and judicial review models).

35. Sunstein recharacterizes Mashaw's idealist view as a simple interpretive view, not one aimed at predicting. Cass Sunstein, *Political Economy, Administrative Law: A Comment*, 6 J. L. ECON. & ORG. 299, 303 (1990).

36. Mashaw, *supra* note 26, at 279-81. See generally Cass Sunstein, *Paradoxes of the Regulatory State*, 57 U. CHI. L. REV. 407 (1990) (describing paradoxes; discussion suggests they arise because of unanticipated detriments to regulatory efficiency).

37. Mashaw, *supra* note 26, at 283.

38. Mathew D. McCubbins et al., *Positive and Normative Models of Procedural Rights: An Integrative Approach to Administrative Procedures*, 6 J.L. ECON. & ORG. 307, 313-14 (1990).

39. Mashaw, *supra* note 26, at 289.

40. *Id.* at 292-93.

41. Administrative Conference Recommendation 85-5, 1 C.F.R. § 305.85-5 (1989) (encouraging agencies to use negotiated rulemaking).

42. See Henry H. Perritt, Jr., *Negotiated Rulemaking before Federal Agencies: Evaluation of Recommendations by the Administrative Conference of the United States*, 74 GEO. L.J. 1625 (1987).

43. Critical legal studies attacks all conventional models on the grounds that they are mechanisms for deception. By legitimating bureaucratic control, they frustrate broad reformation of society. Frug, *supra* note 34, at 1379-81. The critics argue that any effort to develop models of administrative law is futile. *Id.* at 1381.

dering American society through forms of organization transparently open to transformation.⁴⁴

While there are dissenters from the view emphasizing the dignitary value,⁴⁵ advancement of dignitary goals is a concern both of political science pluralist models and the critical legal studies movement.⁴⁶

There is wide recognition of a dignity basis for due process, as well as the accuracy basis recognized in *Mathews v. Eldridge*.⁴⁷ One of the most cited formulations of a dignity basis is Mashaw's,⁴⁸ and one of the most quotable is Tribe's:

Among the formal procedural safeguards ordinarily held to be required by due process, perhaps the two most striking—the right to be heard and the right to hear why—are ultimately more understandable as inherent in decent treatment than as optimally designed to minimize mistakes. When God asked Adam if he had eaten of the tree of life, the Midrash explains, the point of the exchange was less to minimize the risk of divine error than to afford Adam a moment to regain his composure.⁴⁹

44. *Id.* at 1295–96.

45. Wesley A. Magat & Christopher H. Schroeder, *Administrative Process Reform in a Discretionary Age: The Role of Social Consequences*, 1984 DUKE L.J. 301, 317–18 nn.64–65 (1984).

46. See Jerry L. Mashaw, *Administrative Due Process: The Search for a Dignitary Theory*, 61 B.U. L. REV. 885 (1981) [hereinafter *Administrative Due Process*] (dignitary approach has merit but should place only modest additional demands on procedures necessary to assure rationality in efficiency context).

47. See *Lister v. Hoover*, 706 F.2d 796, 801 (7th Cir. 1983) (due process did not require written reasons for denial of request for in-state tuition) (Swygert, J., dissenting) (the Constitution recognizes higher values than speed and efficiency, citing Martha I. Morgan, *The Constitutional Right to Know Why*, 17 HARV. C.R.-C.L. L. REV. 297 (1982); Robert S. Summers, *Evaluating and Improving Legal Processes—A Plea for "Process Values"*, 60 CORNELL L. REV. 1 (1974)); ROBERT COVER ET AL., *PROCEDURE* 126–27 (1988) (explaining dignity basis for procedure, but acknowledging that limits of procedural entitlements cannot be defined only in terms of what is satisfactory to claimant).

48. Jerry L. Mashaw, *The Supreme Court's Due Process Calculus for Administrative Adjudication in Mathews v. Eldridge: Three Factors in Search of a Theory of Value*, 44 U. CHI. L. REV. 28, 50 (1976) [hereinafter *Due Process Calculus*]. Mashaw explains the limits of the utilitarian approach in *Mathews* and explains how consideration of other values, including individual dignity, equality, and tradition, would improve the acceptability of limits on procedural entitlements. He acknowledges that the additional values would not have led to a different outcome in *Mathews* and that techniques for limiting procedural entitlements under the dignity value have been unsatisfactory. *Id.* at 58. See also Stephen LaTour, *Determinants of Participant and Observer Satisfaction with Adversary and Inquisitorial Modes of Adjudication*, 36 J. PERS. & SOC. PSYCH. 153 (1978) (empirically showing that adversarial procedures are favored because they give disputants more "process control"); Richard B. Saphire, *Specifying Due Process Values: Toward a More Responsive Approach to Procedural Protection*, 127 U. PA. L. REV. 111, 117, 163 (1978) (importance of personal and oral participation to serve dignitary value of procedure not given enough weight by utilitarian approach); Robert S. Summers, *Evaluating and Improving Legal Processes—A Plea for "Process Values"*, 60 CORNELL L. REV. 1, 20–21 (1974); Michelman, *supra* note 20, at 127–28 (due process vindicates values of "participation," noting the psychological importance of "the participatory opportunity," regardless of result).

49. LAURENCE TRIBE, *AMERICAN CONSTITUTIONAL LAW* § 10-15 at 744 (2d ed. 1988). Frank I. Michelman says it this way:

[T]he individual may have various reasons for wanting an opportunity to discuss the decision with the agent. Some pertain to external consequences: the individual might succeed in persuading the agent away from the harmful action. But again a participatory oppor-

The next section of this article considers the impact of shifting to digital electronic technologies on the dignity value.

Despite the criticisms of the traditional formalist model, and its evolution to encompass political participatory and dignitary goals as much as anti-delegation and judicial reviewability mechanisms, it still is the most familiar conceptual framework for thinking about administrative law. The traditional model is the one taught in most law schools. It is the model used by most lawyers to make arguments attacking and defending agency decisions and by most judges to scrutinize agency action and to justify judicial decisions. Accordingly, this article uses the traditional model to assess the attractiveness of electronic methods, while also asking whether electronic methods enhance or diminish participation, the concern of the political scientists, and whether electronic methods worsen or ameliorate the mismatch between legal models and reality, a major concern of critical legal studies adherents. Necessarily simplifying the ongoing effort to identify and to distinguish the values served by administrative law, the article uses formality, efficiency, and participation goals as reasonable proxies for more sophisticated paradigms. The article asks, changing the order of the questions, whether electronic technologies improve efficiency in terms of accuracy of fact-finding and use of agency resources, whether they enhance participation in terms of interest group politics and control and human dignity, and whether they can ensure the formality necessary for effective judicial review.

The next sections argue that the electronic methods used in the ways sketched here advance virtually all of the traditional goals of administrative law, while also lessening the gap between legal models and reality—a major concern of critical legal studies. Special attention is given to the softer⁵⁰ form of the participation goal, the feeling that one needs flesh-and-blood attention to the human dimensions of one's problem. One of the author's colleagues⁵¹ said on reviewing an earlier draft of this article, "This is too cold-blooded for me." The following analysis considers whether an electronic agency is necessarily more cold-blooded than a nonelectronic one.⁵²

ARE TECHNOLOGY AND POLICY-BASED PARADIGMS RECONCILABLE?

Assessing the fit between information technology and the three paradigms of administrative law—formality, efficiency, and participation—

tunity might also be psychologically important to the individual: to have played a part in, to have made one's apt contribution to, decisions which are about oneself may be counted important even if the decision, as it turns out, is the most unfavorable one imaginable and one's efforts have not proved influential.

Michelman, *supra* note 20, at 127-28.

50. See *TRIBE*, *supra* note 49, § 10-13 at 717 (*Mathews'* utilitarian calculus tends to dwarf soft variables, quoting *Due Process Calculus*, *supra* note 48, at 48).

51. Catherine Lancot, Associate Professor of Law, Villanova University School of Law.

52. The question of whether electronic methods make administrative procedure more or less cold-blooded implicates the argument over whether formal procedure serves only accuracy-enhancing goals, or whether it also serves dignitary and participation goals.

benefits from a comparison of two technologies: telephony and digital electronic technologies.

Just because technologies exist does not mean they replace previous methods. The telephone, for example, is more than a century old, but telephonic communication plays only a supporting role in adjudication and rulemaking.⁵³ Telephonic hearings are used occasionally, but the practice is seen as novel and controversial.

Digital electronic technologies already are playing a more central role than telephony. No one seriously would consider permitting, let alone requiring, corporate reports to be made to SEC by telephone; yet EDGAR requires that they be made by digital electronic communication. Digital electronic technologies are becoming common methods of disseminating public information. Voice telephone is used relatively rarely for this purpose.⁵⁴

There are two conceivable reasons for the reluctance to make wider use of telephone technology: the need for a record of the communication, which is not provided by a telephone conversation; and a psychological reluctance to substitute telephone communication for face-to-face contact. The first reason, the need for a better record than is provided by telephone technology, should not be a barrier to acceptance of digital electronic technologies more than telephone technologies. The text accompanying notes 81-83 explains the ways of ensuring an adequate record of digital electronic communications, which, despite limitations and uncertainties, are better means for ensuring a record than telephone contact. Even though telephone conversations can be recorded, organizing the recorded material for later retrieval is insuperably burdensome for large quantities of material.

The second possible reason, psychological or cultural reluctance to substitute any kind of technology for face-to-face contact, is a bigger problem. In most cases, however, the substitution contemplated by the hypotheticals is a substitution of digital electronic technology for paper, not for face-to-face contact.

This part of the article assesses the four basic hypothetical technology uses in terms of their impact on the three goals for administrative law. This part develops the following arguments:

Digital electronic information technologies advance efficiency goals and also can advance participation goals, thus mitigating the tension that most commentators have believed is unavoidable between efficiency and participation goals such as personal dignity.

53. The role of telephonic communication is greater in internal agency management.

54. Hybrid technologies, using digital electronic technologies to organize and permit retrieval of prerecorded voice segments, are employed in some cases for electronic dissemination. A prominent example is the Internal Revenue Service Taxpayer Assistance System. Under this system, a taxpayer desiring brief instructions on how to prepare income tax forms dials a number and then selects particular instructions by entering responses on a touch-tone phone to prerecorded menus.

Electronic information technologies can increase fulfillment of participation goals even more than may be desirable because they reduce the need for intermediaries and reduce the barriers of geographic distance.

At some point, increasing fulfillment of participation goals begins to conflict with fulfillment of the formality (judicial reviewability) goal because the administrative process becomes too informal.

Impact on Efficiency

The Supreme Court, in *Mathews v. Eldridge*, enshrined one purpose of administrative process: promoting accuracy in fact-finding while minimizing the burden on agency resources. This represents an efficiency approach to designing administrative process. All four hypothetical uses of electronic technologies further this goal, although the cost of electronic food stamps may compare unfavorably with conventional techniques. This section reviews the efficiency implications of each of the hypotheticals.

Electronic adjudication would provide a more complete and much more accessible record of adjudications than paper processes. Because of the basic similarity of the adjudication process regardless of agency, formats and software could be standardized, making it easier for adjudication records to be transferred among agencies and the National Archives. Appellate review of agency adjudications would be facilitated by development of judicial capacity to handle the standardized formats.

Two other efficiency-enhancing aspects of electronic adjudication are worth thinking about. First, in order for the processing of litigation information to be automated, it must be more structured and stylized than is the case under current practice. The effect would be rather like filling out a preprinted form rather than writing a free-form complaint and other pleadings and memoranda. The benefit would be to reduce the burden on counsel and decisionmaker of managing mounds of paper and of spending hours to locate particular documents or passages in transcripts. The Administrative Procedure Act (APA) already permits the use of forms.

Second, the need for live proceedings would be diminished but not entirely extinguished. The shift from oral exchanges to electronic exchanges may present some difficulty. The received legal tradition places much weight on live credibility determinations by the fact finder. On the other hand, the preference for live presentation of testimony already has been weakened somewhat with the acceptance of videotape depositions and their use for a wide variety of purposes in lieu of live testimony.⁵⁵ There is no reason that a digitized videotape segment should be less acceptable than an analog videotape, assuming that the potential for tampering with content is reduced.

The concern with electronic signatures on adjudicatory pleadings is a red herring. A variety of techniques for authenticating electronic documents exist that are as good or better than traditional handwritten signatures. The

55. See TAX COURT RULE 81 (providing for videotape depositions).

need to authenticate documents, to detect or prevent forgeries, and to detect or prevent data loss or corruption in the filing process is common both to electronic adjudication and to electronic contracting. The private sector has moved aggressively in recent years to embrace electronic contracting under the umbrella of a set of format standards developed by American National Standards Institute (ANSI) Accredited Standards Committee X12 and loosely called EDI, and conceptually similar standards developed separately for electronic funds transfer. These electronic contracting practices offer potential efficiencies to the governmental procurement process, and the General Services Administration and the Defense Department have committed to use EDI. As this possibility becomes known to government lawyers, they struggle to decide if signature requirement and the requirement for a "writing" under the governmental Statute of Frauds⁵⁶ can be satisfied by electronic messages instead of physical writings. There is growing agreement among lawyers knowledgeable about electronic contracting that authentication and signature concerns can be addressed by existing legal concepts in conjunction with adequate audit and record keeping controls.⁵⁷

Electronic rulemaking has efficiency implications essentially similar to those for the vision of electronic adjudication: a more complete and more easily accessible record, and the likelihood of some degree of format standardization for economic reasons.

Rulemaking notices must be reasonably calculated to inform the general public under the basic concepts enshrined in section 553 of the Administrative Procedure Act.⁵⁸ Practically, posting something on an electronic bulletin board organized by topic may be better notice than publishing something in the *Federal Register* because it is instantaneously accessible by anyone who can communicate with the bulletin board.⁵⁹ Electronic information formats have the potential to permit enhanced public access even as the volume of information grows because of the potential for better indexes that are computer searchable and the possibility of free-text search.

On the other hand, changing the state of a table in a rulemaking database does not necessarily alert all users of the database that there has been a change. Even if it did, alerting everyone in the country to every regulatory or policy change would overwhelm all users of the system. In order to satisfy the requirement for notice, it may be necessary to develop electronic "filters"

56. 31 U.S.C. § 1501 (1988).

57. See MICHAEL BAUM & HENRY H. PERRITT, JR., ELECTRONIC CONTRACTING, PUBLISHING AND EDI LAW §§ 6.5-6.32 (1991); Electronic Messaging Services Task Force, *The Commercial Use of Electronic Data Interchange—A Report and Model Trading Partner Agreement*, 45 BUS. LAW. 1645 (1990).

58. 5 U.S.C. § 553 (1988) (providing for notice and comment rulemaking).

59. The rapid spread of desktop computer modems into individual businesses and homes and into public libraries means that almost anyone has the technological means to access electronic bulletin boards.

that citizens can tailor to alert them to changes or potential changes in rules they want to know about.

The concept of "actual notice" would work much better with electronic rulemaking than with conventional technology. The RMS would set a flag⁶⁰ as soon as a particular user reads or otherwise accesses a particular notice.

The formats for public comments can be sufficiently flexible to permit affected citizens to comment as they wish. There is, however, a tension between additional structure, desirable to facilitate machine processing of comments, and flexibility, desirable to allow commenters to say whatever they wish. One attractive possibility, mitigating the tension, is to construct an interactive electronic form. The blanks on the form would correspond to the issues raised by the agency in the electronic notice of rulemaking. An unsophisticated commenter simply would fill out the form on his or her PC.

The advantages of expanding electronic methods for internal agency management are greatly reduced transaction costs for making managerial decisions, advancing the efficiency goal.

Electronic delivery of services offers faster availability of funds and improved ability to audit, also advancing the efficiency goal. EBT improves accountability and security. Cash change for purchases is not necessary. Unused recipient benefits remain stored, awaiting the next purchase.⁶¹

Cost of some early systems are a problem, however. EBT administrative costs were substantially reduced from approximately \$27 per case month to approximately \$9 per case month but stayed about three times higher than the costs of a coupon system.⁶² System improvements were implemented to minimize the chance for recurrence of problems that occurred during early stages of the test.⁶³

Virtually no one questions the efficiency-enhancing value of electronic methods for disseminating certain types of government information.

Impact on Participation and Individual Dignity

All models of administrative procedure accept participation as a goal. Participation serves pluralist political purposes and also advances dignity goals. Administrative procedure is closely modeled on due process requirements, at least those parts of administrative procedure that are adjudicatory. Accordingly, the justifications offered for due process are appropriate justifications for administrative adjudicatory procedure. The Supreme Court, in *Mathews v. Eldridge*,⁶⁴ enshrined one aspect of the efficiency goal

60. "Setting a flag" is a kind of electronic checkmark.

61. 49 Fed. Reg. 33,154 (1984).

62. 55 Fed. Reg. 49,661 (1990).

63. *Id.*

64. 424 U.S. 319 (1976).

in due process: promoting accuracy in fact-finding. But there are other, "softer" goals that frequently escape notice.⁶⁵

Because automation intuitively enhances efficiency more than it enhances participation and human values, it is important to evaluate the impact on dignity of moving to digital electronic technologies. This section considers each of the hypothetical uses of technology in terms of the impact on participation generally and on dignity more specifically.⁶⁶ It starts with electronic rulemaking because there, the potential impact is greatest.

The dignity value should be served better by using electronic technologies for rulemaking, because it would give a wider variety of citizens real access to the rulemaking activity, at least if the percentage of the population with desktop computers continues to increase rapidly, or if appropriate networks are constructed to permit ordinary citizen access to electronic rulemakings through public library desktop computers.

Intuitively, using digital electronic technologies for adjudication seems to reduce the dignity value. In order for the processing of the litigation information to be automated, it must be more structured and stylized than is the case under current practice. Requiring litigants to fill out preprinted forms rather than writing free-form complaints increases formality and reduces flexibility to tailor the procedure to the circumstances of an individual case.⁶⁷ The dignity value could be disserved if the digital electronic technologies increase the proportion of cases in which a decisionmaker says in effect, "I would like to help you but the rules do not permit me to do so." This may be an even more serious blow to legitimacy and the dignity value than reducing face-to-face contact. Automation frequently involves a special kind of codification of rules, a codification that, absent some special precautions, can make the rules very difficult to apply flexibly and difficult to change without a score of programmers and a year and a half. While technology has the capacity to make government more flexible and adaptable, it also may make it less adaptable.⁶⁸ User-friendly electronic forms could reduce the need to access agencies only through counsel, thereby enhancing individual participation and dignity, but system designers must seek to design such forms into the public interfaces of electronic systems. System designers also must emphasize user-friendly computer interfaces.

Objections to electronic adjudication can be anticipated, expressing

65. Professor Frank I. Michelman divides explanatory procedures into formal and nonformal procedures. Michelman, *supra* note 20.

66. See *Administrative Due Process*, *supra* note 46, at 903-04 (exploring relationship between participation and dignity values; noting they are not the same).

67. Sometimes organizations destroy or ignore information nuances in order to facilitate processing. JAMES BENIGER, *THE CONTROL REVOLUTION: TECHNOLOGICAL AND ECONOMIC ORIGINS OF THE INFORMATION SOCIETY* 15 (1986) (commenting on impact of paper forms in bureaucracy; arguing that efforts to retain control through information processing play a central role in social development).

68. See generally SHOSHANA ZUBOFF, *IN THE AGE OF THE SMART MACHINE: THE FUTURE OF WORK AND POWER* (1988) (case studies contrasting automation strategies that enlarge the human role from those that diminish the human role).

antipathy for assembly line or mechanical justice. Agencies using electronic adjudication would be attacked for failing to give case-by-case attention to the facts of a particular case. Individual claimants or respondents would never "get their day in court," critics would say, because they would never be able to tell their stories to a human being. These expressions reflect valid concerns, recognized in the dignity goal of procedure, but an idealized vision of administrative reality. The present day reality is that most administrative adjudication is of the assembly line variety, and almost no individual participants get to tell their stories at leisure. The burden of the case load and the economics of dealing with it already have created assembly line justice. The new technologies simply would cause the assembly line to work better.

The dignity value would be reduced by electronic adjudication for the actual parties only to the extent that under present systems they have face-to-face contact with decisionmakers rather than working entirely through counsel and the use of digital electronic technologies would eliminate this face-to-face contact.

Some automation initiatives have been well received on the dignity dimension. The electronic food stamp evaluation reports indicated that participant groups preferred the EBT system to coupons.⁶⁹ Retailers and banks expressed their pleasure regarding the time and effort saved by not having to process coupons.⁷⁰

Separate from the dignity concern is another participation-linked concern: the question of whether it is an undue burden to impose electronic filing requirements on a broad-based group of regulatees. Closely associated with this question is the nature of the data structures required to be filed and the availability of inexpensive hardware and software to translate information formats likely to be possessed by the filer into the formats required by the agency. These questions essentially are the same ones that have so far blocked most electronic filing with federal courts, except under a few relatively narrow pilot projects. The solution lies in standard procedures and data structures embodied in user-friendly commercial software.

The most profound implications for participation and dignity goals arise from the idea that the rulemaking process might become less discrete and more in the nature of a dialogue.⁷¹ The interactive capability could blur the distinction between incomplete and complete rulemaking decisions. The technology permits a dialogue between regulator and regulatee, reducing the need for communications between the two to occur by means of formal written documents in the form of petitions, comments, and final rules. The electronic dialogue approach to regulation and policymaking strongly resembles the relational contract view of contract formation and modification in the private sector; the relationship between the parties evolves

69. 55 Fed. Reg. 49,661 (1990).

70. *Id.*

71. The author thanks David R. Johnson of Wilmer, Cutler & Pickering for first suggesting the implications of this possibility.

over time rather than arising from discrete decisions and documents.⁷²

Electronic agency management also would tend to increase fulfillment of dignity goals for agency personnel, by making it easier for any agency employee to communicate with higher authority.⁷³

Dissemination of government information inherently relates to dignity and participation goals. Participation is more effective when the participant is well informed, so electronic delivery of services in the form of information services promotes participation goals. The possibility of access to electronic information raises a number of questions under the Freedom of Information Act (FOIA), including whether information in electronic form is an "agency record," whether the FOIA access requirement covers software as well as raw data, and whether it obligates agencies to release information in the formats requested or only in the formats chosen by the agency.⁷⁴

Two of the sharpest controversies to date with respect to agency use of electronic information technologies have involved a blurring of the boundary between public and private sector action in disseminating information and a blurring of the boundary between access and dissemination.⁷⁵ In 1986, the Federal Maritime Commission (FMC) began to modernize ocean shipping tariffs by converting to an electronic database format. As a part of this conversion, the FMC intended to provide direct public access through dial-up telephone lines to the new tariff database. The electronic information industry objected strenuously, led by vendors of private ocean shipping tariff databases. In the end, a compromise was reached, which limited public dial-up access to the Federal Maritime Commission database.⁷⁶

The blurring of the distinction between access and dissemination collapses an important legal distinction made between creating a record and providing access to existing records. Only the latter is required under the FOIA. Dissemination with paper technologies involves the agency in affirmatively preparing material for publication and then arranging for printing and distribution, activities involving much greater commitment of agency resources than simply providing access on request. When electronic tech-

72. See BAUM & PERRITT, *supra* note 57, at § 6.4 (explaining relational contract theory).

73. Dignity of agency personnel is not a traditional concern of administrative law, but Frug's assessment of dignity includes large organization employee perspectives. Frug, *supra* note 34.

74. See Henry H. Perritt, Jr., *Federal Electronic Information Policy*, 63 TEMPLE L. REV. 201 (1990) (analyzing application of FOIA to electronic formats).

75. The literature distinguishes access, disclosure, and discrimination in terms of how much initiative the government takes to propagate the electronic information. Access is the most passive role for the government, involving release of information only on request. Dissemination is the most active role for the government, involving affirmative steps to publish information. Disclosure is an intermediate level of government activity, involving the placement of the information in a place and in a form that makes it easy for interested persons to retrieve it. See generally *id.* at 203 n.9.

76. See 55 Fed. Reg. 42,416 (1990) (extending comment period on advance notice of proposed rulemaking); *id.* at 31,199 (soliciting public comment on proposed Automated Tariff Filing and Information System).

nologies are used, the distinction between access and dissemination is blurred. Making a database available for dial-up access gets it in the hands of an outside party just like dissemination does; yet the initiative for obtaining a copy of the material is with the private citizen rather than the agency.

The problem with the indistinct lines between electronic access and publishing is that an apparently sensible step to provide electronic access may put the agency in competition with private sector publishers. This was the source of controversy with the FMC system. Whether the government should engage in electronic publishing of its information raises a number of policy questions that are less narrowly focused than the electronic FOIA question. The electronic publishing questions mainly involve the questions of competition between public and private sectors and the degree to which the government should rely on the private sector to distribute public information electronically. The questions involve a conflict between participation and efficiency goals. Relying on the private sector may be more efficient, but may reduce participation because government information may cost more.

The debate over the government's role in electronic dissemination focuses on disseminating or releasing at lower levels of added value to electronic information. At one extreme, the government could withhold everything except raw data in electronic form, leaving to the private sector the tasks of adding value in the form of retrieval software, sophisticated data structures and formats, and indexes. At the other extreme, the government could make its entire information systems available online through sophisticated telecommunication systems. Obviously, permitting private citizens simply to plug into the internal agency information system represents a dramatic erosion of the boundary between agency and public.

Both electronic access and electronic dissemination are the subjects of policy guidelines from the American Bar Association.⁷⁷ The electronic access guidelines urge agencies, and the Congress if necessary, to recognize electronic formats as covered by the Freedom of Information Act, and to allow FOIA requesters to specify whether they want paper or electronic formats when an agency has both. The dissemination guidelines recognize that it is appropriate for agencies to act affirmatively in certain cases to disseminate information electronically, and recognize the need for certain value-added features to be part of any government electronic dissemination program, including appropriate electronic indexes, templates, and search tools. The guidelines articulate a presumption that electronic information developed with public money to serve internal agency needs, including value-added retrieval features, should be made available to the public. Affirmative

77. Electronic FOIA guidelines were adopted by the ABA Board of Governors in its winter 1990 meeting. The author of this article drafted electronic dissemination guidelines for the ABA Section on Administrative Law and Regulatory Practice, approved by the Section's Council at its mid-winter 1991 meeting and adopted by the House of Delegates of the ABA in August 1991.

programs of electronic dissemination can save agencies and requesters the costs of making and responding to ad-hoc requests under the Freedom of Information Act, and further the policies of that act by anticipating likely requests. The guidelines recognize the importance of diversity in electronic information sources and advocate that agencies encourage multiple sources of public information and experimentation with different information features. This means respecting the need for private sector incentives, while avoiding government created or supported monopoly. The guidelines recognize the important role that depository libraries and other public and private libraries should play in assuring a diversity of electronic information products and distribution channels. They discourage tying up public information, and associated retrieval features, with intellectual property rights.

Impact on Formality

The possibility of regulation or policymaking occurring through dialogue, using the mechanism of electronic rulemaking, raises some profound legal and institutional issues, among other things, because it would blur the concept of a "record" of a particular proceeding and would erode the final decision concept. Existing administrative law paradigms require discrete events, primarily "final decisions" by administrative agencies, to permit the judicial scrutiny that is the mainstay of political accountability in administrative law.

The problem for law is to decide how to ensure accountability in the electronic dialogue approach to policymaking. This is not a problem, of course, as long as both parties to the dialogue agree with each other. Law rarely is difficult when there is harmony, but governmental decisionmaking presupposes instances in which citizens must comply with decisions with which they do not agree. In a democratic society, this necessitates some mechanism for challenging the decision and obtaining review of it by higher political authority. If the challenger cannot identify the particular decision he seeks to have reviewed, accountability is diminished. The final decision requirement serves two purposes. It reduces party, agency and judicial resources required for multiple appeals of agency decisions; and it minimizes intrusion of the judicial branch of government into an agency's domain by permitting an agency to moot an otherwise objectionable preliminary decision.

Whether the final decision requirement should be diluted in electronic rulemaking should depend on the degree to which the efficiencies available from electronic rulemaking overcome the costs to efficiency and comity resulting from its relaxation or dilution.

Formality in decisionmaking and in presenting positions intended to influence decisionmaking has advantages. For one thing, it ensures that the decisions and positions are institutional ones rather than personal ones. It

may be, of course, that emerging technologies for "groupware"⁷⁸ may permit internal clearances to be obtained automatically as a prerequisite for a decision or a position being filed. Even if such techniques are developed and accepted, however, the result would be somewhat more formality and less of a dialogue than has been suggested for the Rulemaking Management System.

The opportunities and problems associated with an electronic dialogue as the predominant rulemaking process are essentially the same as those associated with negotiated rulemaking.⁷⁹ The decisionmaking agency has better awareness of party needs, problems and interests because of more informal communications. The informal communication is feasible because the time lags associated with each communication event are much smaller. To some extent, the electronic rulemaking approaches are easier to square with traditional administrative procedure concepts because it is not as hard to reconstruct the record of an electronic rulemaking as it is to reconstruct the record of a negotiated rulemaking. On the other hand, exchanging electronic messages is certainly not the same thing as face-to-face group discussion in terms of nuances of oral expression and body language.

The electronic agency management hypothetical presents some risks, primarily by undermining formality. There might be a greater likelihood of premature or whimsical decisions without adequate consultation,⁸⁰ and the possibility that changes in instructions to lower levels of the organization would go unnoticed. Both of these disadvantages could be mitigated by the same approaches used to ensure adequate consultation in electronic rulemaking and to ensure that interested persons are alerted to changes that affect them.

The formality-related problems to be solved for electronic delivery of services are those of electronic contracting and electronic funds transfer generally: potentially increased risk of forgery.⁸¹

EBT creates a complete audit trail and facilitates reconciliation and reporting capabilities. EBT eliminates or significantly reduces many of the opportunities for fraud existent in the paper system. Only those members of households to which the benefit card and PIN are issued may use the benefit device. Food stamp coupons contain no household identifying information to permit enforcement of this use limitation.

The solutions to the risk of forgery problems are the same ones being developed for authenticating electronic messages used in electronic

78. Groupware is a kind of software for electronic mail and word processing that permits many people to participate electronically in drafting, editing and commenting on a single document. See generally MICHAEL SCHRAGE, *SHARED MINDS: THE NEW TECHNOLOGIES OF COLLABORATION* (1990).

79. See *supra* notes 41-42.

80. This is the same difficulty with personal as opposed to institutional decisions noted in the discussion of electronic rulemaking.

81. Forgery, broadly conceived, involves misrepresenting the author of a message and also involves unauthorized alteration in the contents of a message.

contracting and electronic funds transfer in the private sector. There is no reason to believe that these problems are particularly difficult to solve with appropriate understanding of legal concepts and auditing techniques.

ADAPTING THE TECHNOLOGY

Two policy-based paradigms associated with the formality goal seem to require particular efforts to maintain in an electronic environment. The first is the need for a certain degree of formality in agency, and possibly party and agency statements. The second is preservation of a record of what statements were made. It is not difficult to adapt a technology to the first of these. The same human and organizational procedures that prevent submitting official statements on paper without appropriate authorization can prevent unauthorized electronic submissions. These traditional techniques depend on human compliance with rules. They can be supplemented in an electronic environment by technical means. For example, it would be relatively easy to design the rulemaking or adjudication systems so they accept only those submissions accompanied by a password-like token that can come only from the person with authority to approve the submission. In networked computer systems, the approval token could be generated automatically when the authorized person reads the proposed submission and signifies approval by checking a box or making a menu selection on his or her screen. There is a trade-off between complex authentication procedures built into an electronic system and system cost and performance. It always is important not to overdesign security systems out of proportion to the risks involved.⁸² The problem, of course, is deciding how much formality is desirable. There is a tension between the dignity value and most types of formality.⁸³

Preserving Formality

Pervading all four visions are two threats to short-term and long-term public access to the record of agency decisionmaking. The first threat is technological obsolescence, the possibility that by the time someone wants to read the electronic file, computer hardware and software capable of reading the information in the file will not be available. This problem can be solved, under recommendations developed for the Administrative Conference of the United States by the author of this article,⁸⁴ by developing appropriate standards for information exchange, so that information

82. OFFICE OF MANAGEMENT AND BUDGET, A FIVE-YEAR PLAN FOR MEETING THE AUTOMATIC DATA PROCESSING AND TELECOMMUNICATIONS NEEDS OF THE FEDERAL GOVERNMENT II-40 (Nov. 1990).

83. See Frug, *supra* note 34, at 1276.

84. Recommendation 90-5, 55 Fed. Reg. 53,269 (1991) (to be codified at 1 C.F.R. part 305); HENRY H. PERRITT, JR., REPORT AND RECOMMENDATIONS ON FEDERAL AGENCY ELECTRONIC RECORDS MANAGEMENT AND ARCHIVES TO THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES (Aug. 1990).

in today's formats can be converted to tomorrow's formats.

The second threat is the possibility that specific messages representing preliminary decisions, notices, party positions, applications for benefits or evidence may be integrated into databases as a proceeding goes forward, losing their discrete character. This problem also exists in electronic contracting, and the same methods for preserving an audit trail for individual messages in electronic contracting are appropriate to preserve an electronic record of agency decisionmaking.

Good electronic record systems design ensures that archives and records retention needs are designed into the system. While such design features may be difficult to incorporate in PC-based systems, the communications link for the adjudication and rulemaking systems is an obvious and fail-safe point of capture for maintaining a comprehensive record of adjudication and rulemaking electronic submissions. Technical means could ensure that nothing gets into the system without being entered in a docket and having an archival copy made. The integrity would be greater than that achievable with human- and paper-based systems.

Preserving the Dignity Value

The discussion of the impact of electronic methods on the dignity value noted that the risk is that codifying procedural rules in computer programs can make the rules for citizen/agency interaction more rigid and difficult to change. Electronic methods of adjudication, rulemaking, agency management, and delivery of services should provide appropriate rule-modifiability by ensuring that electronic systems are accessible and user friendly. An electronic form or template should always permit inclusion of information that does not fit predefined categories or fields and should permit use of the electronic channels for a free-form dialogue with a real person, if only for assistance in filling out electronic forms. Failure to offer such channels might be a basis for invalidating decisions reached through the electronic systems.

CONCLUSION

Adoption of information technology in connection with rulemaking, adjudication, internal management, and service-delivery advances traditional goals of administrative procedure in both the short and long run. Efficiency is advanced, participation increased, and necessary formality can be assured in properly designed systems.

Barriers to wider adoption of information technology result from misapplication of legal concepts and the absence of widely acceptable format standards for value-added information. There is no reason that existing concepts for signatures and document authentication cannot be adapted easily to electronic formats. The necessary analytical work is well underway in support of electronic contracting in the private sector. As this article suggests, no

changes in the Administrative Procedure Act or its underlying concepts should be necessary to permit electronic adjudication, electronic rulemaking, electronic agency management, or electronic dissemination of information.

In the long run, adoption of information technology will blur the boundaries between citizen and agency and between agency and court. Blurring of these boundaries may necessitate rethinking the definitions of some of the basic events that define the administrative process, public participation and judicial review. Blurring boundaries between agency and court through relaxation of the final decision rule can be handled by comparing costs and benefits of interlocutory electronic review versus maintaining a defined point at which an agency decision is subject to review. Blurring of the boundary between citizen and agency does raise somewhat more difficult questions relating to institutional versus personal expression and accountability.

To John Podesta
From Sally Katzen

456-2215

REGULATORY WORKING GROUP

Meeting Wednesday January 26, 1994

Agenda

DRAFT!

o E.O. 12866 Implementation

Status of listing of significant regulations
Molly Poag, DOI Process

→ Status of Existing Reg Review Plans

Status of Reg Neg candidates

o E.O. 12875 Implementation

o Announcements/Housekeeping

- RWG List - get changes to OIRA
- New transmittal form for regs
- RISC report - such data useful?

o Small Business Conference

o RWG Working Groups

1. Cost Benefit Analysis (Ex Post)
Steve Kaplan ✓
Joe Stiglitz ✓
2. Risk Assessment Guidelines
Jack Gibbons ✓
Carol Rasco?
John Donahue?
3. Streamlining Internal Agency Regulatory Processes
Jack Quinn
Molly Poag
4. Use of Information Technology to Improve Rulemaking
John Podesta ✓
Richard Rominger ?

FAV

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General projects
agenda

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John - This is
what we are
working on with NRC
Jeff Lubbers

Draft

Purpose Statement for Electronic Regulation Development Pilot

As a part of the Administration's efforts to rely on and improve rulemaking processes as laid out in section 6(a) of Executive Order 12866, and to enhance public and private partnerships, the Nuclear Regulatory Commission (NRC), the Administrative Conference of the United States (ACUS), and the Office of Management and Budget (OMB) are cooperating in the establishment of an electronic negotiated rulemaking pilot project.

The Administrative Conference has established leadership and expertise in regulatory negotiation and has taken the initiative in examining potential the legal implications of new technologies for existing administrative law doctrines. In addition it was selected by the National Performance Review's Reinventing Government Laboratory to pilot and demonstrate electronic communication between private and government entities as part of an aggressive effort to encourage alliances and partnerships. The National Performance Review (NPR) is endorsing efforts to facilitate electronic government and is strongly encouraging initiatives on improving regulatory systems.

The NRC on its own initiative sought formal representation on OMB's interagency Regulatory Working Group with other federal agencies such as EPA, HHS, and FERC. This committee was established by E.O. 12866 in response to NPR recommendations and is chaired by the Administrator of Office of Information and Regulatory Affairs. The future agenda of the Regulatory Working Group includes developing ways to encourage more innovative regulatory approaches. These include application of risk-based techniques to regulation, anticipatory and consensus-based rulemaking, greater public awareness and participation, and improvement of regulatory science through the use of advisory boards. The approaches are all ones with which the NRC has experience or has demonstration programs underway.

The "Reg-Net" project will demonstrate the use of electronic conferences and facilitation as a real-time implementation of many ACUS recommendations on regulatory negotiation. Anticipated advantages include: improvements in the quality of the developed rule, reduced contention resulting from addressing disagreements as they occur, and reduced drafting and implementation time.

With small amounts of interagency funding, ACUS will obtain leading national researchers with expertise in administrative law and electronic information to assist with identification and evaluation of legal issues as they arise. A special committee of ACUS members will review these issues and recommend solutions. Under the pilot, public interest groups, industry, and the general public will be able to participate in a rule development discussion by interacting with NRC officials and each other on-line. The pilot will also test many of the concepts associated with a National Accelerated Learning Network and the Accelerated Regulatory Information System (ARIS) as described by Andy Campbell of the National Performance Review team on August 26, 1993. This "Reg-Net" project will draw on and coordinate ongoing initiatives, including the NRC High Performance Computing project, the NSF/NPR/NRC Mosaic development effort, and the ACUS ADR e-mail pilot.

federal register

Wednesday
April 29, 1992

Part V

Office of Management and Budget

Management of Federal Information
Resources; Notice

OFFICE OF MANAGEMENT AND BUDGET

Management of Federal Information Resources

AGENCY: Office of Management and Budget, Executive Office of the President

ACTION: Proposed Revision of OMB Circular No. A-130.

SUMMARY: The Office of Management and Budget is revising Circular No. A-130, Management of Federal Information Resources. This notice proposes revisions concerning information management policy, including policies relating to information dissemination, records management, and cooperation with State and local governments.

DATES: Persons who wish to comment on the proposed revisions to Circular No. A-130 should submit their comments no later than August 27, 1992.

ADDRESSES: Comments should be addressed to: Information Policy Branch, Office of Information and Regulatory Affairs, Office of Management and Budget, Room 3235 New Executive Office Building, Washington, D.C. 20503.

ELECTRONIC AVAILABILITY AND COMMENTS:

This document is available on the Internet via anonymous File Transfer Protocol (FTP) from [nis.nsf.net](ftp://nis.nsf.net) as `/omb/omb.a130.rev1` (do not use any capital letters in the file name). For those who do not have FTP capability, the document can also be retrieved via mail query by sending an electronic mail message to nis-info@nis.nsf.net with no subject, and with `send omb.a130.rev1` as the first line of the body of the message. Comments may be sent via electronic mail to omb.a130@nist.gov and will be included as part of the official record. For assistance using FTP, mail query, or electronic mail, please contact your system administrator.

FOR FURTHER INFORMATION CONTACT:

Peter N. Weiss, Information Policy Branch, (202) 395-4814. Copies of current circulars can be obtained from the address above.

SUPPLEMENTARY INFORMATION:

Background

The Paperwork Reduction Act (44 U.S.C. Chapter 35) assigns the Director of the Office of Management and Budget (OMB) responsibility for maintaining a comprehensive set of information resources management policies and for promoting the application of information technology to improve the use and dissemination of information by Federal agencies.

To fulfill these responsibilities, OMB issued Circular No. A-130, Management of Federal Information Resources (50 FR 52730; December 24, 1985), which provided a policy framework for the management of Federal information resources. Since the Circular was issued in 1985, Federal agencies have introduced major new information programs involving the electronic collection and dissemination of information. Congress has also enacted several laws bearing on the Circular, especially amendments to the Paperwork Reduction Act (Pub. L. 99-500), the Computer Security Act of 1987 (Pub. L. 100-235), the Computer Matching and Privacy Protection Act of 1988 (Pub. L. 100-503), and the Computer Matching and Privacy Protection Amendments of 1990 (Pub. L. 101-508). Since publication of the Circular, OMB has addressed the need for additional guidance in several notices:

(1) Notice of Policy Guidance on Electronic Collection of Information (52 FR 29454; August 7, 1987);

(2) Advance Notice of Further Policy Development on Dissemination of Information (54 FR 214; January 4, 1989);

(3) Second Advance Notice of Further Policy Development on Dissemination of Information (54 FR 25554; June 15, 1989).

The notice of June 15, 1989, withdrew the notice of January 4, 1989, and announced plans to revise the basic information dissemination policy of Circular No. A-130. Most recently, on March 4, 1991, OMB published a notice setting forth plans for revision of the Circular (56 FR 9026). This notice presents part of the revisions outlined in the notice of March 4, 1991, and further notices of proposed revisions will follow on other topics, discussed below.

Also, consistent with the October 1, 1991, Notice of Rescission of OMB Circulars (56 FR 49824), OMB is proposing to incorporate into Circular No. A-130 certain provisions of existing Circular No. A-3, Government Publications, and of Circular No. A-114, Management of Federal Audiovisual Activities. Upon the adoption of these revisions, Circular Nos. A-3 and A-114 would be rescinded and cease to exist as separate Circulars.

The purpose of the proposed revision is to bring into proper perspective the following key areas that were not sufficiently emphasized in the original circular:

(1) IRM planning, with special focus on the information life cycle.

(2) The role of State and local governments in the management of IRM resources and information, and the need for Federal agencies to consider the

effects of their information activities on those governments.

(3) Records management, with a special focus on the need to properly manage electronic records.

(4) Electronic collection of information, identifying those conditions where agencies should consider using electronic collection techniques in order to reduce costs or provide better services.

(5) Information dissemination policy, stating the basic responsibility of all agencies to disseminate information consistent with their missions, and laying out the structure and substance of agency dissemination programs.

Structure of this Proposed Revision

The present notice proposes revisions primarily to Section 6 of the Circular, Definitions; to Section 7, Basic Considerations and Assumptions; to Section 8a, Information Management Policy, and to Appendix IV, Analysis of Key Sections. Minor changes are proposed for other sections. The structural outline of the Circular, together with notations as to which parts would be changed, is presented below.

Outline of OMB Circular No. A-130 [Reflecting revisions proposed by this notice]:

1. **Purpose** [Unchanged]
 2. **Rescissions:** [Rescinds Circular No. A-3, Government Publications, and Circular No. A-114, Management of Federal Audiovisual Activities, and incorporates their essential elements into Circular No. A-130.]
 3. **Authorities:** [Cites additional statutory authorities for the Circular.]
 4. **Applicability and Scope** [Unchanged]
 5. **Background:** [Unchanged]
 6. **Definitions:** [Changed]
 7. **Basic Considerations and Assumptions** [Changed]
 8. **Policies:**
 - a. **Information Management Policy** [Changed]
 - b. **Information Systems and Information Technology Management** [Unchanged]
 9. **Assignment of Responsibilities** [Change reflecting management of audiovisual productions from Circular No. A-114]
 10. **Oversight** [Unchanged]
 11. **Effective Date** [Changed]
 12. **Inquiries** [Unchanged]
 13. **Sunset Review Date** [Changed]
- Appendix I: **Federal Agency Responsibilities for Maintaining Records about Individuals** [Unchanged]
- Appendix II: **Cost Accounting, Cost Recovery, and Interagency Sharing of**

Information Technology Facilities [Unchanged]

Appendix III: Security of Federal Automated Information Systems [Unchanged]

Appendix IV: Analysis of Key Sections [Changes reflecting revisions to policy.]

Summary of Proposed Revisions

2. Rescissions. Consistent with proposals stated in the notices of January and June 1989, OMB will rescind Circular No. A-3, Government Publications. OMB also will rescind Circular No. A-114, Management of Federal Audiovisual Activities.

3. Authorities. Circular No. A-130 as published on December 24, 1985, inadvertently omitted reference to the Freedom of Information Act. This notice corrects the omission. It also adds a reference to the Computer Security Act of 1987 and the Chief Financial Officers Act of 1990.

6. Definitions. OMB introduces definitions of the terms "record" and "records management" as defined at 44 U.S.C. 3301 and 44 U.S.C. 2901(2) respectively because the newly proposed policy explicitly covers records management, and introduces the terms "information life cycle" and "information product" because policy statements regarding records management and information dissemination use the terms. The term "audiovisual production" is introduced in order to incorporate policy presently contained in Circular No. A-114. The proposed revision modifies the definition of the term "information" for clarity. The term "access to information" is deleted because its use has caused confusion.

7. Basic Considerations and Assumptions. Aside from minor stylistic changes and renumbering, the revisions are as follows:

Subsection 7d is a new statement, taken from the public notice of June 15, 1989, providing that in order to minimize the cost and maximize the usefulness of government information activities, the expected public and private benefits derived from government information should exceed the public and private costs of the information.

Subsection 7e in the current Circular is deleted; the intended meaning is adequately stated in OMB Circular No. A-76.

Subsection 7i is a new statement emphasizing the need for strategic planning in the management of information resources.

Subsection 7j is a new statement stressing the need for Federal government cooperation with State and

local governments in the management of information resources.

Subsection 7l is a revision of the present 7f adding a statement about the potential benefits of electronic dissemination of information.

8a. Information Management Policy. The section begins with a set of policy statements concerning information resources management planning with special emphasis on the information life cycle. Both in the planning statements and elsewhere, are new policy statements concerning the role of State and local governments and concerning records management. Also introduced are new policy statements regarding electronic collection and dissemination of information. The information dissemination policy statements are the most extensively revised, incorporating the concepts set forth in the June 15, 1989 notice (54 FR 25554).

8a(1). Information Management Planning. This policy is new. However, Section 8a(1)(d), pertaining to acquiring information through sharing from existing sources is incorporated from the existing Circular at 8a(2).

8a(2) and (3). Information Collection. Section 8a(2) states the applicable information collection principles derived primarily from the Paperwork Reduction Act. Section 8a(3) introduces a new policy concerning situations under which electronic information collection is appropriate. These statements revise those proposed in the August 7, 1987, notice (52 FR 29454).

8a(4). Records Management. Section 8a(4) sets forth basic policy regarding records management.

8a(5) through 8a(7). Information Dissemination Policy. The notice of June 15, 1989, set forth certain conclusions about the proper role for executive branch agencies in government information dissemination and the boundaries between Federal and nonfederal roles. OMB has used these conclusions as a starting point for revising information dissemination policy.

8a(5) states the basic responsibility of all agencies to provide information to the public consistent with their missions. Section 8a(6) sets forth guidance on how agencies should go about disseminating information. Section 8a(7) is a new proposal that agencies maintain an information dissemination management system to ensure the routine performance of certain dissemination functions. The system and its functions are new proposals; however, OMB Bulletins 88-14, 89-15, 90-09, and 91-16 have required an information dissemination management system. Finally, this

section incorporates certain requirements from Circular No. A-3, Government Publications, which is to be rescinded.

8a(8). Avoiding Improperly Restrictive Practices. Section 8a(8) states a new policy concerning agency control over information that it intends to disseminate. This section also states policy regarding user charges for information products.

8a(9). Electronic Information Dissemination. New section 8a(9) sets forth policy about when agencies should consider disseminating information in electronic format. This section parallels section 8a(3) concerning electronic information collection.

8a(10). Information Safeguards. Section 8a(10) incorporates policy statements found in the existing Circular at 8a(3) through (6).

9. Assignment of Responsibilities. Proposed new section 9(a)(10) carries over the requirement in Circular No. A-114 that the head of each agency designate an office with responsibility for management oversight of agency audiovisual productions.

Plans for Development of Other Topics

The second phase of revisions to Circular No. A-130, which OMB expects to publish for comment in the Fall of 1992, will address the following areas:

8b. Information Technology Management Policy. The revisions to Section 8b of the circular will focus on strategic information resources management (IRM) planning and analysis of proposed investments in information technology. The Circular will state policy principles to guide agency planning and explain OMB's expectations when reviewing agency requests for funding of information and information technology resources. OMB intends to make more explicit the policy linkages between this circular and OMB Circular Nos. A-109 (including the applicability of Circular No. A-109 to information technology acquisitions), A-123 and A-127, with the goal of avoiding unnecessary overlap and harmonizing definitions among all four. It will link the management of information resources to the achievement of larger organizational missions, stress meeting user needs when preparing requirements analyses, suggest policy level control and review mechanisms for IRM policies and projects, and discuss ways to evaluate proposed investments in information technology. If warranted, OMB will add an appendix to set forth this framework in some detail.

Appendix I: Federal Agency Responsibilities for Maintaining Records

About Individuals. Changes to agency responsibilities resulting from recent enactments of privacy legislation have previously been issued in OMB guidance, and will be incorporated into Appendix I.

Appendix II: Cost Accounting, Cost Recovery, and Interagency Sharing of Information Technology Facilities. OMB will revise Appendix II to reflect changes in law made by the Chief Financial Officers Act and the Budget Enforcement Act of 1990. These requirements include ensuring that accounting and reimbursements for sharing of information technology facilities are monitored and approved. The revision will also address the use of revolving funds for cost recovery and accounting for inter-agency and intra-agency reimbursements. In addition, the revision will address the budgetary scoring of capital leases and lease-to-purchase agreements for information technology.

Appendix III: Security of Federal Automated Information Systems. OMB will revise Appendix III to incorporate requirements of the Computer Security Act of 1987 including requirements for security plans described in OMB Bulletin 90-08. Those revisions will incorporate changes based on the experience gained in recent computer security visits agencies. OMB will also work with the National Institute of Standards and Technology to implement recommendations of the Computer Security and Privacy Advisory Board (established by the Computer Security Act) regarding better coordination between this Circular and OMB Circular No. A-123.

Accordingly, Circular A-130 is proposed to be amended as set forth below.

James B. MacRae, Jr.

Acting Administrator and Deputy Administrator.

Office of Information and Regulatory Affairs.

Proposed Revisions to Circular No. A-130

2. Rescissions: The issuance of this Circular, as amended, rescinds Circular Nos. A-3 and A-114.

3. Authorities: This Circular is issued pursuant to the Paperwork Reduction Act, as amended (44 U.S.C. Chapter 35); the Privacy Act, as amended (5 U.S.C. 552a); the Freedom of Information Act, as amended (5 U.S.C. 552); the Chief Financial Officers Act (31 U.S.C. 3512 et seq.); the Federal Property and Administrative Services Act, as amended (40 U.S.C. 759 and 487); the

Computer Security Act (40 U.S.C. 759 note); the Budget and Accounting Act, as amended (31 U.S. Chapter 11); Executive Order No. 12046 of March 27, 1978; and Executive Order No. 12472 of April 3, 1984.

6. Definitions

a. The term "agency" means any executive department, military department, government corporation, government controlled corporation, or other establishment in the executive branch of the Federal government, or any independent regulatory agency. Within the Executive Office of the President, the term includes only the Office of Management and Budget and the Office of Administration.

b. 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.

c. The term "government information" means information created, collected, processed, disseminated, or disposed of by the Federal Government.

d. The term "information life cycle" means the stages through which information passes, typically characterized as creation or collection, processing, dissemination, use, storage, and disposition.

e. The term "information 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.

f. The term "information system" means the organized collection, processing, maintenance, transmission, and dissemination of information in accordance with defined procedures, whether automated or manual.

g. The term "major information system" means an information system that requires special continuing management attention because of its importance to an agency mission; its high development, operating or maintenance costs; or its significant impact on the administration of agency programs, finances, property, or other resources.

h. The term "dissemination" means the active distribution of government information to the public. Not considered dissemination with 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 or Privacy Act.

i. The term "information technology" means the hardware and software used in connection with government information, regardless of the technology involved, whether computers, telecommunications, micrographics, or others. For the purposes of this Circular, automatic data processing and telecommunications activities related to certain critical national security missions, as defined in 44 U.S.C. 3502(2) and 10 U.S.C. 2315, are excluded.

j. The term "information technology facility" means an organized grouping of personnel, hardware, software, and physical facilities, a primary function of which is the operation of information technology.

k. The term "information resources management" means the planning, budgeting, organizing, directing, training, and administrative control associated with government information. The term encompasses both information itself and the related resources, such as personnel, equipment, funds, and technology.

l. 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)

m. The term "records" means all books, papers, maps, machine-readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of the data in them. (44 U.S.C. 3301)

n. The term "records management" means the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved with respect to records creation, records maintenance and use, and records disposition in order to achieve adequate and proper documentation of the policies and transactions of the Federal Government and effective and economical management of agency operations. (44 U.S.C. 2901(2))

o. The term "audiovisual production" means a unified presentation, developed according to a plan or script, containing visual imagery, sound or both, and used to convey information.

7. Basic Considerations and Assumptions

a. The Federal Government is the largest single producer, collector, consumer, and disseminator of information in the United States. Because of the extent of the government's information activities, and the dependence of those activities upon public cooperation, the management of Federal information resources is an issue of continuing importance to all Federal agencies, State and local governments, and the public.

b. Government information is a valuable national resource. It provides citizens with knowledge of their 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.

c. The unrestricted flow of information between the government and its citizens is essential to a democratic society. It is also essential that the government minimize the Federal paperwork burden on the public, minimize the cost of its information activities, and maximize the usefulness of government information.

d. In order to minimize the cost and maximize the usefulness of government information activities, the expected public and private benefits derived from government information should exceed the public and private costs of the information.

e. The nation can benefit from government information disseminated both by Federal agencies and by diverse nonfederal parties, including State and local government agencies, educational and other not-for-profit institutions, and for-profit organizations.

f. Because the public disclosure of government information is essential to the operation of a democracy, the public's right of access to government information needs to be protected in the management of Federal information resources.

g. The individual's right to privacy must be protected in Federal Government information activities involving personal information.

h. Systematic attention to the management of government records is an essential component of sound public resources management which ensures public accountability. Together with records preservation, it protects the government's historical record and guards the legal and financial rights of the government and its citizens.

i. Strategic planning is basic to the operation of sound government programs. This planning ensures that the

management of information resources reflects agency strategic priorities within budgetary limitations.

j. Because State and local governments are important producers of government information for many areas such as health, social welfare, labor, transportation, and education, the Federal Government must cooperate with these governments in the management of information resources.

k. 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.

l. Modern information technology presents opportunities to improve the management of government programs to provide better service to the public. The availability of government information in diverse media, including electronic formats, permits the public greater flexibility in using the information.

m. Federal Government information resources management policies and activities can affect, and be affected by, the information policies and activities of other nations.

8. Policy

a. Information Management Policy

(1) Information Management Planning.

Agencies shall plan in an integrated manner for managing information throughout its life cycle. Agencies shall:

(a) Consider, at each stage of the information life cycle, the effects of decisions and actions on other stages of the life cycle, particularly those concerning information dissemination;

(b) Consider the effects of their actions on members of the public and ensure consultation with the public as appropriate;

(c) Consider the effects of their actions on State and local governments and ensure consultation with those governments as appropriate;

(d) Seek to satisfy new information needs through legally authorized interagency or intergovernmental sharing of information, or through commercial sources, where appropriate, before creating or collecting new information;

(e) Integrate planning for information systems with plans for resource allocation and use, including budgeting, acquisition, and use of information technology;

(f) Train personnel in skills appropriate to management of information;

(g) Protect government information commensurate with the risk and magnitude of harm that could result

from the loss, misuse, or unauthorized access to or modification of such information;

(h) Use voluntary standards and Federal Information Processing Standards where appropriate or required;

(i) Consider the effects of their actions on the privacy rights of individuals, and ensure that appropriate legal and technical safeguards are implemented;

(j) Record, preserve, and make accessible sufficient information to ensure the management and accountability of agency programs, and to protect the legal and financial rights of the Federal Government;

(k) Incorporate records management and archival functions into the design, development, and implementation of information systems;

(l) Provide for public access to records where required or appropriate.

(2) **Information Collection.** Agencies shall collect or create only that information necessary for the proper performance of agency functions and which has practical utility.

(3) **Electronic Information Collection.** Agencies shall use electronic collection techniques where such techniques reduce burden on the public, increase efficiency of government programs, reduce costs to the government and the public, and/or provide better service to the public. Conditions favorable to electronic collection include:

(a) The information collection seeks a large volume of data and/or reaches a large proportion of the public;

(b) The information collection recurs frequently;

(c) The structure, format, and/or definition of the information sought by the information collection does not change significantly over several years;

(d) The agency routinely converts the information collected to electronic format;

(e) A substantial number of the affected public are known to have ready access to the necessary information technology and to maintain the information in electronic form; and

(f) Conversion to electronic reporting, if mandatory, will not impose substantial costs or other adverse effects on the public, especially State and local governments and small business entities.

(4) **Records Management.** Agencies shall:

(a) Ensure that records management programs provide adequate and proper documentation of agency activities;

(b) Ensure the ability to access records regardless of form or medium;

(c) In a timely fashion, establish, and obtain the approval of the Archivist of the United States for, retention schedules for Federal records; and

(d) Provide appropriate training to all agency officials and employees regarding their records management responsibilities.

(5) **Providing Information to the Public.** Agencies have a responsibility to provide information to the public consistent with their missions. In providing information, the public's right of access must be balanced with the protection of the Government's deliberative process. Agencies may discharge this responsibility by:

(a) Providing information, as required by law, describing agency organization, activities, programs, meetings, systems of records, and how the public may gain access to agency information resources;

(b) Providing access to agency records under provisions of the Freedom of Information Act and the Privacy Act; and

(c) Providing such other information as is necessary or appropriate for the proper performance of agency functions;

(6) Information Dissemination.

Agencies shall:

(a) Disseminate information in a manner that achieves the best balance among the goals of maximizing the usefulness of the information and minimizing the cost to the government and the public;

(b) Disseminate information products equitably and on timely and equal terms;

(c) Take advantage of all dissemination channels, Federal and nonfederal, including State and local governments and private sector entities, in discharging agency information dissemination responsibilities;

(7) **Information Dissemination Management System.** Agencies shall maintain and implement a management system for all information products which shall, at a minimum:

(a) Assure that information products are necessary for proper performance of agency functions (44 U.S.C. 1108);

(b) Consider whether an information product available from other Federal or nonfederal sources is equivalent to an agency information product and reasonably achieves the dissemination objectives of the agency;

(c) Establish and maintain inventories of all agency information products;

(d) Develop such other aids to locating information products disseminated by the agency, including catalogs and directories, as may reasonably achieve agency information dissemination objectives;

(e) Ensure that members of the public with disabilities whom the agency has a responsibility to inform have a reasonable ability to access the information products;

(f) Ensure that government publications are made available to depository libraries through the facilities of the Government Printing Office, as required by law (44 U.S.C. 1902);

(g) Provide electronic information products to the Government Printing Office for distribution to depository libraries, within budgetary limitations;

(h) Establish and maintain communications with members of the public and with State and local governments so that the agency creates information products that meet their respective needs.

(i) Provide adequate notice when initiating, substantially modifying, or terminating significant information products;

(8) Avoiding Improperly Restrictive Practices. Agencies shall:

(a) Avoid establishing, or permitting others to establish on their behalf, exclusive, restricted, or other distribution arrangements that interfere with the availability of information products on a timely and equitable basis;

(b) Avoid establishing restrictions or regulations on the use, resale, or redissemination of Federal information products by the public; and,

(c) Set user charges for information products at a level sufficient to recover the cost of dissemination but no higher. They shall exclude from calculation of the charges costs associated with original collection and processing of the information. Exceptions to this policy are:

(i) Where statutory requirements are at variance with the policy;

(ii) Where the agency collects, processes, and disseminates the information for the benefit of a specific identifiable group beyond the benefit to the general public; or

(iii) Where the agency plans to establish user charges at less than cost of dissemination because of a determination that higher charges would constitute a significant barrier to properly performing the agency's functions, including reaching members of the public whom the agency has a responsibility to inform.

(9) **Electronic Information Dissemination.** Agencies shall use electronic media and formats, as appropriate and within budgetary constraints, to disseminate information products in order to make government information more easily accessible and useful to the public. The use of

electronic media and formats for information dissemination is appropriate under the following conditions:

(a) The agency develops and maintains the information electronically;

(b) Electronic media or formats are practical and cost effective ways to provide public access to a large, highly detailed volume of information;

(c) The agency disseminates the information product frequently;

(d) The agency knows a substantial portion of users have ready access to the necessary information technology and training to use electronic information products;

(e) A change to electronic dissemination, as the sole means of disseminating the information product, will not impose substantial acquisition or training costs on users, especially State and local governments and small business entities.

(10) Safeguards. Agencies shall:

(a) Ensure that information is protected commensurate with the risk and magnitude of the harm that would result from the loss, misuse, or unauthorized access to or modification of such information;

(b) Limit the collection and sharing of information which identifies individuals and proprietary information to that which is legally authorized and necessary for the proper performance of agency functions;

(c) Ensure that records subject to the Privacy Act are adequately and properly protected, and protect confidential and proprietary information from unwarranted disclosure;

(d) Provide individuals, upon request, with access to, and the ability to amend errors in, systems of records, consistent with the Privacy Act.

* * *

9. Assignment of Responsibilities

a. All Federal Agencies. The head of each agency shall:

* * *

(10) Designate an office with responsibility for management oversight of agency audiovisual productions and establish an appropriate program for the management of audiovisual productions in conformance with the requirements contained at 36 C.F.R. 1232.4.

Proposed Revisions to Appendix IV, Analysis of Key Sections

Section 6, **Definitions.** Access and Dissemination. The current Circular No. A-130 distinguishes between the terms "access to information" and "dissemination of information" in order to separate statutory requirements from

policy considerations. The first term means giving members of the public, at their request, information to which they are entitled by a law such as the Freedom of Information Act. The latter means actively distributing information to the public at the initiative of the agency. The distinction appeared useful at the time Circular No. A-130 was written, because it allowed OMB to focus discussion on Federal agencies' responsibilities for actively distributing information.

However, popular usage and evolving technology have blurred differences between the terms "access" and "dissemination" and readers of the Circular were confused by the distinction. For example, if an agency "disseminates" information via an online computer system, one speaks of permitting users to "access" the information, and online "access" becomes a form of "dissemination." Thus, the proposed revision defines only the term "dissemination." Special considerations based on access statutes such as the Privacy Act and the Freedom of Information Act are explained in context.

Information Product. This notice defines the term "information product" to include all information that is disseminated by Federal agencies. While the provision of access to online databases and search software included on compact disk, read-only memory (CD-ROM) are often called information services rather than products, there is no clear distinction and, moreover, no real difference for policy purposes between the two. Thus, the term "information product" applies to both products and services, and makes no distinction based on how the information is delivered.

8a(1). Information Management Planning. Parallel to new Section 7, Basic Considerations and Assumptions, the proposed revision to Section 8a begins with information resources management planning. Planning is the process of establishing a course of action to achieve desired results with available resources. Planners translate organizational missions into specific goals and, in turn, into measurable objectives.

The Paperwork Reduction Act introduced the concept of information resources management and the principle of information as an institutional resource which has both value and associated costs. Information resources management is a tool that managers use to achieve agency objectives. Information resources management is successful if it enables managers to

achieve agency objectives efficiently and effectively.

Information resources management planning is an integral part of overall mission planning. Agencies need to plan from the outset for the steps in the information life cycle. When creating or collecting information, agencies must plan how they will process and transmit the information, how they will use it, how they will protect its integrity, what provisions they will make for access to it, whether and how they will disseminate it, how they will store and retrieve it, and finally, how the information will ultimately be disposed of. They must also plan for the effects their actions and programs will have on the public and State and local governments.

The Role of State and Local Governments.

OMB proposes additions at Sections 7a and 7j, Basic Considerations and Assumptions, concerning State and local governments, and also in policy statements at sections 8a(1)(c), (3)(f), (6)(c), (6)(e), and (11)(f).

State and local governments cooperate as major partners with the Federal Government in the collection, processing, and dissemination of information. For example, State governments are the principal collectors and/or producers of information in the areas of health, welfare, education, labor markets, transportation, the environment, and criminal justice. The States supply the Federal Government with data on aid to families with dependent children; medicare; school enrollments, staffing, and financing; statistics on births, deaths, and infectious diseases; population related data that form the basis for national estimates; employment and labor market data; and data used for census geography. National information resources are greatly enhanced through these major cooperating efforts.

Federal agencies need to be sensitive to the role of State and local governments in managing information and in managing information technology. When planning, designing, and carrying out information collections, agencies should systematically consider what effect their activities will have on cities, counties, and States, and take steps to involve these governments as appropriate. Agencies should ensure that their information collections impose the minimum burden and do not duplicate or conflict with local efforts or other Federal agency requirements or mandates. The goal is that Federal agencies routinely integrate State and local government concerns into Federal

information resources management practices. This goal is consistent with standards for State and local government review of Federal policies and programs, as established by Executive Order No. 12612, Federalism, and Executive Order No. 12372, Intergovernmental Review of Federal Programs.

Training.

Training is particularly important in view of the changing nature of information resources management. Decentralization of information technology has placed the management of automated information and information technology directly in the hands of nearly all agency personnel rather than in the hands of a few employees at centralized facilities. Agencies must plan for incorporating policies and procedures regarding computer security, records management, protection of privacy, and other safeguards into the training of every employee.

8a(2). Information Collection. The Paperwork Reduction Act requires that the creation or collection of information be carried out in an efficient, effective, and economical manner. When Federal agencies create or collect information—just as when they perform any other program functions—they consume scarce resources. Such activities must be continually evaluated for their relevance to agency missions.

Agencies must justify the creation or collection of information based on their statutory functions. Policy statement 8a(2) uses the justification standard—"necessary for the proper performance of the functions of the agency"—established by the Paperwork Reduction Act (44 U.S.C. 3504(c)(2)). Furthermore, the policy statement includes the requirement that the information have practical utility, as defined in the Paperwork Reduction Act (44 U.S.C. 3502(16)) and elaborated in 5 CFR Part 1320. Practical utility includes such qualities of information as accuracy, adequacy, and reliability. In the case of general purpose statistics or recordkeeping, practical utility means that actual uses can be demonstrated (5 CFR 1320.7(o)). It should be noted that OMB's intent in placing emphasis on reducing unjustified burden in collecting information, an emphasis consistent with the Act, is not to diminish the importance of collecting information whenever agencies have legitimate program reasons for doing so. Rather, the concern is that the burdens imposed should not exceed the benefits to be derived from the information. Moreover,

if the same benefit can be obtained by alternative means that impose a lesser burden, that alternative should be adopted.

8a(3). Electronic Information

Collection. Section 71 articulates a basic assumption of the Circular that modern information technology can help the government provide better service to the public through improved management of government programs. One potentially useful application of information technology is in the government's collection of information. While some information collections may not be good candidates for electronic techniques, many are. Agencies with major electronic information collection programs have found that automated information collections allow them to meet program objectives more efficiently and effectively. Electronic data interchange (EDI) and related standards for the electronic exchange of information will ease transmission and processing of routine business transaction information such as invoices, purchase orders, catalog data, price information, bills of lading, and other common commercial documents. EDI holds similar promise for the routine filing of regulatory information such as tariffs, customs declarations, license applications, tax information, and environmental reports.

Benefits to the public from electronic information collection appear substantial. Electronic methods of collection reduce paperwork burden, reduce errors, facilitate validation, and provide increased convenience and more timely receipt of benefits. Advantages to the agencies of automated information collection may include resource savings due to:

- (a) better targeting of program resources;
- (b) more efficient and hence less costly monitoring of programs;
- (c) decreased costs due to reduced error rates;
- (d) decreased costs of information reporting or capture; and
- (e) increased timeliness in processing and disseminating information.

The proposed policy in Section 8a(3) encourages agencies to explore the use of automated techniques for collection of information.

8a(4). Records Management. Section 8a(4) begins with the fundamental requirement for Federal records management, namely, that agencies create and keep adequate and proper documentation of their activities. Federal agencies cannot carry out their missions in a responsible and responsive manner without adequate recordkeeping. Section 7h articulates the

basic considerations concerning records management. Policy statements concerning records management are also interwoven throughout Section 8a, particularly in subsections on planning (8a(1)(i)), information dissemination (8a(7)), and safeguards (8a(10)).

Records support the immediate needs of government—administrative, legal, fiscal—and ensure its continuity. Records are essential for protecting the rights and interests of the public and for monitoring the work of public servants. The government needs records to ensure accountability to the public which includes providing for the public availability of information.

Each stage of the information life cycle carries with it records management responsibilities. Agencies need to record their plans, carefully document the content and procedures of information collection, ensure proper documentation as a feature of every information system, keep records of dissemination programs, and, finally, ensure that records of permanent value are preserved.

Preserving records for future generations is the archival mission. Advances in technology affect the amount of information that can be created and saved, and the ways this information can be made available. Technological advances can ease the task of records management; however, the rapid pace of change in modern technology makes decisions about the appropriate application of technology critical to records management. Increasingly the records manager must be concerned with preserving valuable electronic records in the context of a constantly changing technological environment.

Records schedules are essential for the appropriate maintenance and disposition of records. Records schedules must be prepared in a timely fashion, implement the General Records Schedules issued by the National Archives and Records Administration, be approved by the Archivist of the United States, and be kept accurate and current. (See 44 U.S.C. 3301 et seq.) The National Archives and Records Administration and the General Services Administration provide guidance and assistance to agencies in implementing records management responsibilities. They also evaluate agencies' records management programs to determine the extent to which they are appropriately implementing their records management responsibilities.

8a(5) through 8a(7). Information Dissemination Policy. 8a(5). Providing information to the public. Every agency has a responsibility to inform the public

within the context of its mission. This responsibility requires that agencies actively distribute information, rather than merely responding when the public requests information.

The Freedom of Information Act requires each agency to publish in the Federal Register current descriptions of agency organization, where and how the public may obtain information, the general methods and procedural requirements by which agency functions are determined, rules of procedure, descriptions of forms and how to obtain them, substantive regulations, statements of general policy, and revisions to all the foregoing (5 U.S.C. 552(a)(1)). The Privacy Act also requires publication of information concerning "systems of records" which are records retrieved by individual identifier such as name, Social Security Number or fingerprint. The Government in the Sunshine Act requires agencies to publish meeting announcements (5 U.S.C. 552b (e)(1)). The Paperwork Reduction Act (44 U.S.C. 3507(a)(2)) and its implementing regulations (5 CFR Part 1320) require agencies to publish notices when they submit information collection requests for OMB approval.

As agencies satisfy these requirements, they provide the public basic information about government activities. Other statutes direct specific agencies to issue specific information products or to conduct information dissemination programs. Beyond generic and specific statutory requirements, agencies have responsibilities to disseminate information as a necessary part of performing their functions. For some agencies the responsibility is made explicit and sweeping; for example, the Agriculture Department is directed to "... diffuse among people of the United States, useful information on subjects connected with agriculture ..." (7 U.S.C. 2201). For other agencies, the responsibility may be much more narrowly drawn.

Information dissemination is also a consequence of other agency activities. Agency programs normally include an organized effort to inform the public about the program. Most agencies carry out programs that create or collect information with the explicit or implicit intent that the information will be made public. Disseminating an information product is in many cases the logical extension of information creation or collection.

In other cases, agencies may have information that is not meant for public dissemination but which may be the subject of requests from the public. When the agency establishes that there

is public demand for the information and that it is in the public interest to disseminate the information, the agency may decide to disseminate it automatically.

8a(6). Information Dissemination. The proposed policy in Section 8a(6) sets forth several factors for agencies to take into account in conducting their information dissemination programs. First, agencies must balance two goals: maximizing the usefulness of the information to the government and the public, and minimizing the cost to both. Deriving from the basic purposes of the Paperwork Reduction Act (44 U.S.C. 3501), the two goals are frequently in tension because increasing usefulness usually costs more. Second, section 8a(6)(b) requires agencies to conduct information dissemination programs equitably and in a timely manner.

8a(6)(c), requiring agencies to take advantage of all dissemination channels, recognizes that information reaches the public in many ways. Few persons may read a Federal Register notice describing an agency action, but those few may be major secondary disseminators of the information, affiliated with publishers of newspapers, newsletters, periodicals, or books; affiliated with online database providers; or specialists in certain information fields. While millions of information users in the public may be affected by the agency's action, only a handful may have direct contact with the agency's own information products. As a deliberate strategy, therefore, agencies should cooperate with secondary disseminators in order to further information dissemination goals.

8a(7). Information Dissemination Management System. This section requires agencies to maintain an information dissemination management system which can ensure the routine performance of certain functions, including the essential functions previously required by Circular No. A-3. Smaller agencies need not establish elaborate formal systems, so long as the heads of the agencies can ensure that the functions are being performed.

Subsection (7)(a) carries over a requirement from OMB Circular No. A-3 that agencies' information products are to be, in the words of 44 U.S.C. 1108, "necessary in the transaction of the public business required by law of the agency." (Circular No. A-130 uses the expression "necessary for the proper performance of agency functions," which OMB considers to be equivalent to the expression in 44 U.S.C. 1108.) The point is that agencies should determine systematically the need for each information product.

8a(7)(b) recognizes that to carry out effective information dissemination programs, agencies need knowledge of the marketplace in which their information products are placed. They need to know what other information products users have available in order to design the best agency product. As agencies are constrained by finite budgets, when there are several alternatives from which to choose, they should not expend public resources filling needs which have already been met by others in the public or private sector.

An agency's responsibility to inform the public may be independent of the availability or potential availability of a similar information product. That is, even when another governmental or private entity has offered an information product identical or similar to what the agency would produce, the agency may conclude that it nonetheless has a responsibility to disseminate its own product. Although instances of such duplication will be infrequent, agencies could reach such a conclusion because legal considerations require an official government information product.

8a(7)(c) makes the Circular consistent with current practice (see OMB Bulletins 88-15, 89-15, 90-09, and 91-16), by requiring agencies to establish and maintain inventories of information products. (These bulletins eliminated annual reporting to OMB of title-by-title listings of publications and the requirement for agencies to obtain OMB approval for each new periodical. Publications are now reviewed as necessary during the normal budget review process.) Inventories help other agencies and the public identify information which is available. This serves both to increase the efficiency of the dissemination function and to avoid unnecessary burdens of duplicative information collections. A corollary, enunciated in section 8a(7)(d), is that agencies can better serve public information needs by developing finding aids for locating information produced by the agencies. Finally, section 8a(7)(e) recognizes that there will be situations where agencies may have to take appropriate steps to ensure that members of the public with disabilities whom the agency has a responsibility to inform have a reasonable ability to access the information products.

Depository Library Program.

Proposed sections 8a(7)(f) and (g) pertain to the Federal Depository Library Program. Agencies are to establish procedures to ensure compliance with 44 U.S.C. 1902, which requires that government publications

(defined in 44 U.S.C. 1901 and repeated in Section 6 of the Circular) be made available to depository libraries through the Government Printing Office (GPO).

The depository libraries provide a mechanism for wide distribution of government information that guarantees basic availability to the public. Executive branch agencies support the depository library program both as a matter of law and on its merits as a means of informing citizens about their government. On the other hand, the law places the administration of depository libraries with GPO. Agency responsibility for the depository libraries is limited to supplying government publications through GPO. Agencies play no role in either the administration or financing of the program.

Agencies can improve their performance in providing government publications as well as electronic information products to the depository library program. For example, the proliferation of "desktop publishing" technology in recent years has afforded the opportunity for many agencies to produce their own printed documents. Many such documents may properly belong in the depository libraries but are not sent because they are not printed at GPO. The proposed policy requires agencies to establish management controls to ensure that the appropriate documents reach the GPO for inclusion in the depository library program.

At present, few agencies provide electronic information products to the depository libraries. At the same time, a small but growing number of information products are disseminated only in electronic format. In its June 15, 1989, notice, OMB stated:

... The definition of "government publication" in 44 U.S.C. 1901 is: "informational matter which is published as an individual document. . . ." OMB does not understand that this definition, on its face, includes electronic data files, software, online information services, or the like. Section 1711 of Title 44, for example, requires the Superintendent of Documents "to prepare a catalog of Government publications which shall show the documents printed during the preceding month. . ." (emphasis added). This statutory language supports OMB's exclusion of non-printed electronic information from the definition of government publication. Therefore, OMB believes it is not clear that agencies at present have a legal obligation to make electronic information products available to depository libraries. Nevertheless, OMB

believes that, as a matter of policy, many such products should be made available to the depository libraries in the same manner as printed materials, and intends to redraft the proposed policy to reflect this view. (54 FR 25558).

This proposal affirms that, as a matter of policy, electronic information products generally should be provided to the depository libraries. Given that production and supply of information products to the depository libraries is primarily the responsibility of GPO, agencies should provide appropriate electronic information products to the GPO for inclusion in the depository library program insofar as budgetary resources permit.

At a minimum, agencies should not conclude without investigation that it would be prohibitively expensive to place their electronic information products in the depository libraries. For electronic information products other than online services, agencies have the option of procuring the products through GPO, in which case GPO would pay for depository library copies. Agencies should consider this option, if it would be a cost effective alternative to direct agency procurement, with the understanding that such procurement is voluntary and at the agency's discretion. Agencies could also consider inviting GPO to participate in agency procurement orders in order to produce the necessary copies; or consider negotiating with GPO other terms under which their electronic information products might be provided to the depository libraries. With adequate advance planning, agencies may be able to provide electronic information products to the depository libraries at nominal cost.

Given that executive branch agencies do not finance the depository library program, substantial cost may be a legitimate reason, in a particular case, for not providing an electronic information product to the depository library program. For example, for an agency with a substantial number of existing titles of electronic information products, furnishing copies of each to the depository libraries could be prohibitively expensive. In that situation, the agency should endeavor to make available those titles with the greatest general interest, value, and utility to the public. Substantial cost could also be an impediment in the case of some online information services where the costs associated with operating centralized databases would make provision of direct access to numerous users prohibitively expensive.

Notice to the Public.

Sections 8a(7)(h) and (i) propose new practices for agencies to observe in communicating with the public about information dissemination. Among agencies' responsibilities for dissemination is an active knowledge of, and regular consultation with, the users of their information products. A primary reason for communication with users is to gain their contribution to improving the quality and relevance of government information—how it is created, collected and disseminated. Consultations with users might include conversations at conferences and workshops, careful attention to correspondence and telephone communications (e.g., logging and analyzing inquiries), or formalized user surveys.

A key part of communicating with the public is providing adequate notice of agency information dissemination plans. Because many government information products are important both to the government and to the public, agencies must not act capriciously with respect to information dissemination. Because agencies' information dissemination actions affect other agencies and the public, agencies must forewarn other agencies and the public of significant actions. The decision to initiate, terminate, or substantially modify the content, form, frequency, or availability of significant products should trigger appropriate public notice in advance. Where appropriate, the Government Printing Office should be notified directly. Information products deemed not to be significant require no advance notice.

Examples of significant products (or changes to them) might be those that:

- (a) are required by law; e.g., a statutorily mandated report to Congress;
- (b) involve expenditure of substantial funds;

- (c) by reason of the nature of the information, are matters of continuing public interest; e.g., a key economic indicator;

- (d) by reason of the time value of the information, command public interest; e.g., monthly crop reports on the day of their release;

- (e) will be disseminated in a new format or medium; e.g., disseminating a printed product in electronic medium, or disseminating a machine-readable data file via online access;

Where members of the public might consider a proposed new agency product unnecessary or duplicative, the agency should solicit and evaluate public comments. Where users of an agency information product may be seriously affected by the introduction of

a change in medium or format, the agency should notify users and consider their views before instituting the change. Where members of the public consider an existing agency product important and necessary, the agency should consider these views before deciding to terminate the product. In all cases, however, determination of what is a significant information product and what constitutes adequate notice are matters of agency judgment.

8a(8). Avoiding Improperly Restrictive Practices. Federal agencies are often the sole suppliers of the information they hold. The agencies have either created or collected the information using public funds, usually in furtherance of unique governmental functions, and no one else has it. Hence agencies need to take care that their behavior does not inappropriately constrain public access to government information.

When agencies use private contractors to accomplish dissemination, they must take care that they do not permit contractors to impose restrictions that undercut the agencies' discharge of their information dissemination responsibilities. The contractual terms should assure that, with respect to dissemination, the contractor behaves as though the contractor were the agency. For example, an agency practice of selling, through a contractor, online access to a database but refusing to sell copies of the database itself may be improperly restrictive because it precludes the possibility of another firm making the same service available to the public at a lower price. If an agency is willing to provide public access to a database, the agency should be willing to sell copies of the database itself.

By the same reasoning, agencies should behave in an even-handed manner in disseminating information products. If an agency is willing to sell a database or database services to some members of the public, the agency should sell the same products under similar terms to other members of the public, unless prohibited by statute. When an agency decides it has public policy reasons for offering different terms of sale to different groups in the public, the agency should provide a clear statement of the policy and its basis.

Agencies should not attempt to exert control over the secondary uses of their information products. Indeed, the law prohibits the Federal government from exercising copyright in government information. To be sure, agencies should inform the public as to the limitations inherent in the information product (e.g.,

errors, degree of reliability and validity) so that users are fully aware of the quality and integrity of the information. However, an agency's responsibility to protect against misuse of a government information product does not extend to restricting or regulating how the public actually uses the information. Agencies should not attempt to condition the resale or redissemination of its information products by members of the public. This policy does not apply to library reference materials for which charges are specifically authorized by statute.

User charges.

Title 5 of the Independent Offices Appropriations Act of 1952 (31 U.S.C. 9701) establishes Federal policy regarding fees assessed for government services, and for sale or use of government property or resources. OMB Circular No. A-25, User Charges, implements the statute. It provides for charges for government goods and services that convey special benefits to recipients beyond those accruing to the general public. It also establishes that user charges should be set at a level sufficient to recover the full cost of providing the service, resource, or property. Since Circular No. A-25 is silent as to the extent of its application to government information products, full cost recovery for information products might be misinterpreted to include the cost of collecting and processing information rather than just the cost of dissemination. The policy proposed in Section 8a(8)(c) clarifies the policy of Circular No. A-25 as it applies to information products.

Statutes such as the Freedom of Information Act and the Government in the Sunshine Act establish a broad and general obligation on the part of Federal agencies to make government information available to the public and to avoid erecting barriers that impede public access. User charges higher than the cost of dissemination may be a barrier to public access. Given that the government has already incurred the costs of creating and processing the information for governmental purposes, the economic benefit to society is maximized when government information is publicly disseminated at the cost of dissemination. Absent statutory requirements to the contrary, the general standard for user charges for government information products should be to recover no more than the cost of dissemination.

While OMB does not intend to prescribe procedures for pricing government information products, the cost of dissemination may generally be

thought of as the sum of all costs specifically associated with preparing a product for dissemination and actually disseminating it to the public. An agency may initially prepare an information product for its own internal use, and costs associated with such production are not recoverable as user charges on subsequent dissemination. When the agency prepares the product for public dissemination, and disseminates it, costs associated with preparation and actual dissemination are recoverable as user charges.

However, where agencies provide custom tailored information services to specific individuals or groups, full cost recovery is appropriate. For example, if an agency prepares special tabulations or similar services from its databases in answer to a specific request from the public, all costs associated with fulfilling the request would be charged, and the requester should be so informed before work is begun.

In a few cases agencies engaging in information collection activities augment the information collection at the request of, and with funds provided by, private sector groups. Since the 1920s, the Bureau of the Census has carried out, on request, surveys of certain industries at greater frequency or at a greater level of detail than Federal funding would permit, because gathering the additional information is consistent with Federal purposes and industry groups have paid the additional information collection and processing costs. While the results of these surveys are disseminated to the public at the cost of dissemination, the existence and availability of the additional government data are special benefits to certain recipients beyond those accruing to the public. It is appropriate that those recipients should bear the full costs of information collection and processing, in addition to the normal costs of dissemination.

The requirement to establish user charges is not intended to make ability to pay the sole criterion for determining whether the public receives government information. Agencies must balance the requirement to establish user charges and the level of fees charged against other policies, specifically, the proper performance of agency functions and the need to ensure that information products reach the public for whom they are intended. If an agency mission includes disseminating information to certain specific groups or members of the public and the agency determines that user charges will constitute a significant barrier to carrying out this responsibility, the agency may have

grounds for reducing or eliminating its user charges for the information product, or for exempting some recipients from the charge. Such reductions or eliminations should be the subject of agency determinations on a case by case basis and justified in terms of agency policies.

8a(9). Electronic Information Dissemination. Advances in information technology have changed government information dissemination. Agencies now have available new media and formats for dissemination. The growing public acceptance of electronic data interchange (EDI) and similar standards enhances their attractiveness as methods for government information dissemination. For example, experiments with the use of electronic bulletin boards to advertise Federal contracting opportunities and to receive vendor quotes have achieved wider dissemination of information about business opportunities with the Federal government than has been the case with traditional notices and advertisements. Improved information dissemination has increased the number of firms expressing interest in participating in the government market and decreased prices to the government due to expanded competition. EDI standards will be used increasingly to facilitate dissemination of government information such as environmental data, international trade statistics, transportation tariffs, and economic statistics.

A basic purpose of the Paperwork Reduction Act is "to maximize the usefulness of information collected, maintained, and disseminated by the Federal Government." (44 U.S.C. 3501(3)) Agencies can frequently enhance the value and practical utility of government information as a national resource by disseminating information in electronic media. Electronic collection and dissemination may substantially increase the usefulness of government information products for three reasons. First, information collected electronically is likely to be more timely and accurate because it does not require data re-entry. Second, electronic records often contain more complete and current information because, unlike paper, it is relatively easy to make frequent changes. Finally, because electronic information is more easily manipulated by the user and can be tailored to a wide variety of needs, electronic information products are more useful to the recipients.

As stated at Section 8a(1)(h), agencies should use voluntary standards and Federal Information Processing

Standards to the extent appropriate in order to ensure the most cost effective and widespread dissemination of information in electronic formats.

Agencies can frequently make government information more accessible to the public and enhance the utility of government information as a national resource by disseminating information in electronic media. Agencies generally do not utilize data in raw form, but edit, refine and organize the data in order to make it more accessible and useful for their own purposes. Information is made more accessible to users by aggregating data into logical groupings, tagging data with descriptive and other identifiers, and developing indexing and retrieval systems to facilitate access to particular data within a larger file. As a general matter, and subject to budgetary, security or legal constraints, agencies should make available such features developed for internal agency use as part of their information products.

There will also be situations where the agency determines that its mission will be furthered by providing enhancements beyond those needed for its own use, particularly those that will improve the public availability of government information over the long term. In these instances, the agency should evaluate the expected usefulness of the enhanced information in light of its mission, and where appropriate construct partnerships with the private

sector to add these elements of value. This approach may be particularly appropriate as part of a strategy to utilize new technology enhancements, such as graphic images, as part of a particular dissemination program.

8a(10). Information Safeguards. OMB groups together a number of policy statements that set limiting conditions on agency activities and are standards for information safeguards.

In particular, agencies are to ensure that they meet the requirements of the Privacy Act regarding information retrievable by individual identifier. Such information is to be collected, maintained and protected so as to preclude intrusion into the privacy of individuals and unwarranted disclosure of personal information. Individuals must be accorded access and amendment rights to records, as provided in the Privacy Act. Appendix I prescribes agency procedures for the maintenance of records about individuals, reporting requirements to OMB and Congress, and other special requirements of specific agencies, in accordance with the Privacy Act.

Incorporation of Circular No. A-114.

OMB Circular No. A-114, Management of Federal Audiovisual Activities, last revised on March 20, 1985, prescribes policies and procedures to improve Federal audiovisual management. Although OMB will

rescind Circular No. A-114, its essential policies and procedures will continue. This revision provides information resources management policies and principles independent of medium, including paper, electronic, or audiovisual. By including the definition of "audiovisual production" in the definition of "information," audiovisual materials are incorporated into all policies of this Circular.

The requirement in Circular No. A-114 that the head of each agency designate an office with responsibility for the management oversight of an agency's audiovisual productions and that an appropriate program for the management of audiovisual productions in conformance with 36 C.F.R. 1232.4 is incorporated into this Circular at Section 9a(10). The requirement that audiovisual activities be obtained consistent with OMB Circular No. A-76 is covered by proposed sections 8a(1)(d), 8a(6)(a) and 8a(7)(b).

Procurement policies contained in Circular No. A-114 will be incorporated into an Office of Federal Procurement Policy Letter. The National Archives and Records Administration will continue to prescribe the records management and archiving practices of agencies with respect to audiovisual productions at 36 CFR 1232.4, "Audiovisual Records Management."

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BILLING CODE 3110-01-F

Bruce McConnell.

① Soceries / re Gould et al.

WAS

RWG Technology Subgroup.

Electronic rulemaking doesn't require any changes to RPA.

What does notice and comment look like?

Short / Longterm Goals

① 12-20 pilot programs.

② Evaluation

③ iterative process.

1. coherent experiments

2. long term thinking

3.

★ Framework on OSHA reg-mg. ★ theoretical framework

↓
★★ Draft inventory memo. NRC, OSHA, FDA

What are we trying to accomplish?

What are the costs? Effort/expense needed?

- result in better decision making

- cheaper / efficiency.

- empowering.

RWG Meeting 11/30/93

Bustin: look at conflicting or out-of-date regs.

- ^{among CEOs} perception of a substantial increase in reg burden over last years of Bush's administration / first yr of BC.

Bowles: #1 concern is gov't regs w/ disproportionate effect on small business.

Stiefitz: people shd look at the cumulative burden on various industry.
look at conflicts between regs, eg. desire ~~from~~ for fuel efficiency and goal of statute.

DOT: conflict between agencies driven by statute.

Hatzen: do we need to go back to Congress and try to design a more rational and less burdensome regulatory system. Review plan due at OMB on 12/30 w/ exp toward getting a package to the Hill in the spring.

- also need to include state and local officials. Conference w/ state, local and tribal gov'to next Monday (12/6)

* How do the agencies analyze regulatory process?

Working group on informational technology.

- Ag now provides for teleconferenced hearings.

Stagitz: cost-benefit analysis shd be carried out both in the formation stage and after rules are adopted.

* Working group on post-adoption cost-benefit analysis.

- process by which regs are made. Can we think about reg design taking into account new technology.

* Working group on information agendas.

ED Pilot Project.

- waiver of OMB review in certain instances. Regs published 1700 days early. Early consultations w/ OMB and other program offices.
- ED gave ~~them~~ OIRA a list every 30 days. Old to 45/60 depending on agency.
- ID what is significant or OMB id's what is significant.

Changes in Regs affecting entitlements

REGULATORY WORKING GROUP

November 30, 1993

AGENDA

- o Welcome and Introductions (10 minutes)
- o Purposes of the Regulatory Working Group (20 minutes)
 - (1) RWG as a vehicle for cooperation and coordination in the management of federal regulatory affairs; importance of RWG to the success of the Administration;
 - (2) Importance of the role of RWG members and Regulatory Policy Officers. (List of participants attached);
 - (3) OMB/OIRA efforts to be more helpful to agencies
 - (4) Discussion of Issues for RWG Focus (some as committee of the whole, others in sub-groups). For example:
 - Innovative regulatory techniques
 - Comparative risk assessment*
 - Streamlined approaches for small business
 - Suggestions from RWG members for other topics
- o Status of Implementation of E.O. 12866. (15 minutes)
 - ✓ (1) Designation of Regulatory Policy Officer (due 11/30/93)
senior political person.
 - ✓ (2) Review plan for existing regs (due 12/30/93)
NEC/CEA pushing - offer to help agencies who are struggling.
 - (3) Regulatory Planning
 - Regulatory Agenda (to be published 4/94) - *Know what you're doing.*
 - Regulatory Plan (to be published 10/94)
 - (4) Other Related Administrative Issues
 - Streamlining internal agency regulatory processes. Report due to President and Vice President by 3/30/94.
 - Regulatory Negotiation - identify reg neg to pursue and notify OIRA by 12/31/93.
- o OIRA Review Process -- Implementation Issues (15 minutes)
 - (1) Designation of Significant Regulations - Discussion

opportunity for sharing ideas.

(2) OIRA adherence to time limits and importance of early OIRA involvement.

o Conferences Planned by OIRA (20 minutes)

- (1) State, local and tribal governments (12/6/93)
- (2) Small Business Roundtable (Jan 94).
- (3) Business and Public Interest Groups (Jan/Feb 94)
- (4) Risk Assessment (Feb/Mar 94)

o Training to improve governments regulatory expertise (5 minutes)

- (1) ACUS training program for political appointees
- (2) OIRA Regulatory Exchange Program

o Discussion of Initial Subgroups of RWG (10 minutes)

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November 24, 1993

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TO: REGULATORY WORKING GROUP MEMBERS
FROM: Sally Katzen
SUBJECT: Tuesday, November 30, 1993, Meeting

Please note a change in time for the first Regulatory Working Group meeting on Tuesday, November 30th. The meeting will be from 10am to 12pm, instead of from 9am to 11am, as previously scheduled.

If this presents any difficulties for you, please call me or Don Arbuckle of my staff, 202-395-7340.

Sorry for the inconvenience. I look forward to seeing you Tuesday.