

ALASKA LEGISLATURE COMMITTEE FILES, 1989-1990 8672
6711 SENATE STATE AFFAIRS

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introduced in the 1989 legislative session may have a better chance. Known as the "economy model," the draft law reduces some of the paperwork requirements and excludes some records.

Challenges by the news media to proposed privacy statutes have turned on concerns that they conflict with open-records and open-meeting laws whose purpose is to make government accessible and accountable. That tension erupted last year in Minnesota when the state Supreme Court ruled, in a case brought by a weekly newspaper, that meetings must be closed whenever information classified by Minnesota's data-privacy law as "not public" is discussed. There are more than 300 categories of such information, including welfare department records, criminal investigative files on suspected child abusers, and the home addresses and home phone numbers of public employees. Mark R. Anfinson, general counsel for the Minnesota Newspaper Association, says that the court decision has "turned our open-meeting law into something resembling a Swiss cheese."

Officials involved in administering state freedom of information laws say agencies sometimes try to use privacy laws as an excuse for withholding information that should be public. In Massachusetts, Timothy B. Gassert, director of the Division of Public Records, says state agencies know exactly how to get around freedom of information laws: by mixing public and private data in a computerized database. Current law requires them to release public information, but agencies cannot be compelled to write a new computer program to extract only the public data.

Most state officials agree that freedom of information and privacy laws can coexist but that a balancing act is required. Robert Freeman, executive director of the New York Committee on Open Government, a state agency that administers both laws, says his office takes both into account when requests for information are received. But Freeman says that one of the challenges in interpreting the laws, in cases where there is no statutory direction, is that reasonable people disagree about what constitutes an unwarranted invasion of privacy. "Everyone has a different idea about privacy and a different line of demarcation," he says.

Even if individuals differ, Americans as a group are deeply concerned about personal privacy, according to opinion polls. In a recent survey conducted by Cambridge Reports, a Massachusetts public opinion firm, 67 percent of those polled said that personal privacy is very important compared with the other things they think about; half called for new laws to protect it better.

Privacy advocates say that this concern is justified, especially because of rapid advances in technology. When individual records were stored on paper in disparate locations, there was less risk of their being assembled into accessible dossiers. But now "the physical location [of the data] doesn't make any difference anymore; technology has allowed it to be interconnected," says Priscilla Regan,

Most state officials agree that privacy laws and freedom of information laws can coexist, but they acknowledge that a balancing act is required.

an associate professor at George Mason University in Virginia and the author of a 1986 report by the congressional Office of Technology Assessment on federal record systems and data privacy.

Because personal information may be gathered and shared by local, state and federal agencies, a single mistake

in an individual's file can multiply into a series of nightmares. Civil libertarians point to the case of Terry Dean Rogan, who was arrested by police several times, and even jailed, because of incorrect information in the FBI's National Crime Information Center database. Rogan, a Michigan resident, was on file because a wanted criminal had obtained some of Rogan's identification and used his name while committing crimes in Los Angeles in the early 1980s. The Los Angeles Police Department had entered Rogan's name into the FBI database, which is used by local, state and federal law enforcement officials.

Although Rogan informed police of the error, no one bothered to take his name out of the system, according to Paul Hoffman, legal director for the American Civil Liberties Union in Southern California. Eventually, the real criminal was found and Rogan's name was removed. The ACLU sued the city of Los Angeles on Rogan's behalf and won a summary judgment in 1987. Rogan got a settlement of \$55,000.

Like public records, privately held files full of sensitive information may circulate widely without the knowledge of affected individuals. Employers, hospitals and medical insurance companies, for example, routinely trade data about individuals and use it to make critical decisions about them. Regulation of privately held records is spotty. "Most of the attention has been focused on government abuses," says Robert Jacobson, a researcher at the University of Washington and a former California legislative staffer. "Now it's becoming clear that we are dealing with megacorporations that are almost as big as the government itself, equipped with technology that might be more advanced than what the government has, and therefore more powerful."

In the last two decades, the federal government has passed laws regulating private-sector records held by credit-reporting agencies, banks, educational institutions, cable TV companies and even video rental stores (that law, known as the "Bork Bill," passed after a newspaper published a list of the movie videos rented by U.S. Supreme Court nominee Robert Bork and his family).

Several states have passed their own privacy laws in an attempt to regulate other industries, but legislation is "piecemeal and chaotic," according to David Linowes, who was chairman of the federal Privacy Protection Study Commission from 1974 to 1977. In his 1989 book, *Privacy in America*, Linowes says that only 17 states have privacy laws covering all or some of the personal data collected by insurance companies, and only 13 states regulate both

public and private personnel files.

Predictably, recent bills regulating corporate databases have met with stiff opposition. In Massachusetts, Democratic Senator Lois Pines sponsored a bill last year that would give individuals the right to see and correct records gathered by insurance companies, and to be informed of the reasons behind any denial of coverage.

William F. Carroll, president of the Life Insurance Association of Massachusetts, says the industry opposes the bill because it gives the state insurance commissioner "tremendous latitude in developing insurance information policy and allows the commissioner to hear appeals from insurance applicants who have been denied coverage," effectively allowing the commissioner to make decisions that should be reserved for the companies. Carroll favors less restrictive legislation introduced by Democratic Representative Frank A. Emilio, which is based on a model law developed by the National Association of Insurance Commissioners and which Carroll says many large insurers follow voluntarily.

In Minnesota, a bill giving individuals access to their private-sector personnel files became law in 1989, but not without controversy. Donald Gemberling, director of Minnesota's Data Protection Division, says businesses claimed it would result in "the end of the business climate in Minnesota as we know it." The bill made it through, but only with several exceptions and the stipulation that employees who request their personnel files do so "in good faith." This vague language, which was inserted to satisfy business lobbying groups concerned about potential disruptions during labor disputes, may end up requiring extensive judicial interpretation.

Privacy advocates and civil libertarians recognize that both the private sector and the government have a legitimate need to collect information about individuals. But "we have to strike a balance between the need for the information and the individual's control over it," says



It makes no difference where data is located, says privacy report author Priscilla Regan. "Technology has allowed it to be interconnected."

Janlori Goldman, a staff attorney for the ACLU's Privacy and Technology Project.

Regan, the George Mason University professor, sees a need to re-evaluate privacy rights and responsibilities. "Any time you fill out an application, you set off a whole chain of [data] exchanges and linkages that you won't necessarily know about," she says. Instead of putting the burden on the individual to track down and correct erroneous information, Regan feels, the burden should be shifted to the information bureaucracies themselves.

The amount of data in government files should be limited, says Mitchell Pearlman, director of the Connecticut Freedom of Information Commission. "The real invasion of privacy occurs because the government collects too much information about people, not because it is made public," he says. As an example, he points to Connecticut's mar-

riage license form, which requests the occupation of both spouses. "That may be very interesting," says Pearlman, "but what does it have to do with the state's interest in authorizing marriages?"

In the long run, reformers hope to ensure that personal information isn't used to create potentially damaging life-history dossiers. It takes little imagination to see how information about an individual's race, religion, political affiliation or sexual preferences could be abused by a Big Brother administration or megacorporation.

To keep that from happening, privacy advocates see the need for a shift in basic attitudes, along with stronger laws. "The American people have to overcome their ambivalence over privacy," says Smith, the *Privacy Journal* editor. "We are ambivalent—we complain about [invasions of privacy], but we are very curious about other people, and we give up our privacy for whatever perceived threat may be current, whether it's terrorism, hijacking or whatever. We have to scrutinize these cases very carefully and make sure that the intrusion is only to the extent necessary." □

Policies for the Electronic Information Age

Now that computers have taken over, states need to update the rules for managing their information resources.

Edwin Levine

Information — the lifeblood of government — is getting more complicated to manage.

Like everyone else, states have become totally dependent on computers and software, networks and telephones, for stor-

Edwin Levine is staff director of the Florida Legislature's Joint Committee on Information Technology Resources.

ing, sorting and providing access to their information. Managing this electronic data and the technological structure that supports it will become the challenge of the 90s.

Statutes dealing with government information and the public's right to know have become outdated. Lawmakers are finding themselves embroiled in complex debates over information dissemination

and the costs of access to computerized government information, copyright, computer security, optical storage and computer privacy.

The need for redefinition is based on the increased value of the information being produced, created and stored by government today. It was valuable as "marks on paper," but the costs of finding, sorting, combining and analyzing paper files were prohibitively high. Computerizing the information has reduced costs, improved the ease of use and provided capabilities for information management that were impractical with paper records.

Today it is possible to use technology to manage information, rather than having to manage the technology itself. For state legislatures this is a critical distinction. If we separate the information from the technology that stores and processes it, the underlying policy issues are much clearer. These issues are the meat and potatoes of state legislatures: How will scarce resources be allocated? What are the equity concerns? What is the public interest?

Information is an asset. But does the information belong to the individual who provided it to the motor vehicle registration bureau? Or to the bureau, which wants to sell it to a company that markets mailing lists? Or is it now "public information," which must be provided to any person who asks for it, including the child support enforcement unit that wants to find recalcitrant parents?

Legislative responses to these questions are eclectic. Some states restrict the release of "personally identifiable information," while others limit only distribution of "confidential" information. At the federal level, Congress passed the Computer Matching and Privacy Protection



Act last October. It establishes stringent controls on matching computerized information about individuals.

Studying the problems raised by the growth of computerized government, the Florida Legislature's Joint Committee on Information Technology Resources identified four major groups of issues that lawmakers are going to have to deal with — control of information, its dissemination, its security and its preservation.

One of the problems of controlling information is the question of privacy, allowing people to know what personal information is being collected about them, why it was collected, where it came from, how it will be used, who has access to it. The common concern is the individual's lack of control over information about himself once it is computerized.

The second set of issues raises fundamental questions about government's responsibility for providing access to public information. It brings up such questions as whether government can copyright its information, whether software written by government employees should be sold, who should be allowed and who prevented from disseminating government information, whether government will provide only what the private sector won't, whether information will be available to everyone or only to those with a computer, whether it's fair to provide a computer printout to some and a diskette or tape to others.

The debate over who will profit from the use of information is fierce. Many public agencies would like to offset the tax burden with profits from their investment, but should taxpayers have to pay again for what they have already funded? Minnesota allows its counties to copyright and sell their software. Is it in the public interest to have government compete with private business? Should private software companies be taxed if the receipts are to be used to fund the marketing of software developed by public employees?

Is it fair for government to charge for the examination of its actions? Is it appropriate to require that examination of the public record be based on fees or the ability to pay, or should citizens have free access to this material?

The third and fourth sets of issues that legislatures must address are those of security and preservation. Security is vital to ensure that data is neither altered nor destroyed and that confidential information is not released. Other security issues have to do with disaster recovery, access controls, security plans and protection of functions such as electronic voting systems where the integrity of the process must receive extraordinary attention.

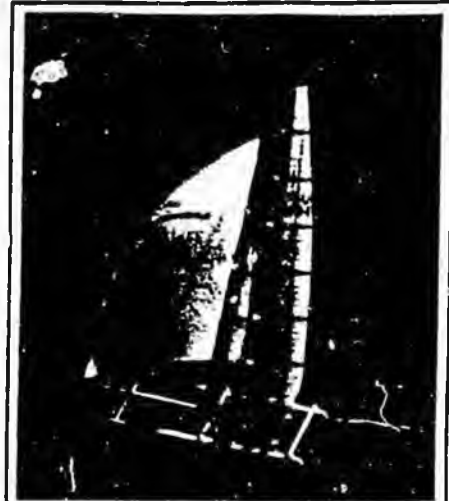
Preservation problems have to do with saving and managing public records that are stored on non-paper media such as magnetic tape or optical disk. Questions that have to be answered include what is the status of non-paper records as evidence, whether a document is a copy or "the" original, how to manage access and destruction of computer records and the software used to search them, and how to determine what records to preserve given the glut of useless information that can now be cheaply stored electronically. Then there is new technology such as electronic mail that never creates a paper document at all.

These issues have already created difficulties for legislatures. In Texas an optical storage law has been challenged because it allowed for the destruction of "the original" paper records and authorized the use of technology for which there are no national standards.

New York has completed a plan to manage and preserve electronic records. The Uniform Commercial Code is being reviewed to determine how electronic records will affect current law.

State legislatures have dealt with broad societal changes in the past, but the information age is speeding toward us a lot faster than anything we've ever dealt with before. The adoption of information technology may be virtually complete by the turn of the century. Will lawmakers have enough time to determine the public interest in these issues?

The treatment of government's own information will be most troublesome. Who will control this information, who will disseminate it, how will it be secured and how will it be preserved? The information age will force every legislature to re-examine old and settled issues from a new perspective.



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THE NEW GIO

Kentucky Department of Information Systems

Statewide Goal: General Purpose Info Bank

The Kentucky Information Systems Commission was created in 1984 to coordinate statewide strategic planning for computerized information systems. As chairman of the commission and commissioner of the Department of Information Systems, Stephen N. Dooley ensures information is planned for and managed.

By Lisa Brooks
Associate Editor

Bulky food stamp policy manuals are one target of Kentucky state government's effort to build an online "locator" system that will electronically disseminate frequently used information to government employees and citizens.

"We feel we have an obligation to find easy ways to disseminate commonly used information electronically, as opposed to paper passing," explained Stephen N. Dooley, commissioner of the Kentucky Department of Information Systems (DIS) and chairman of the Information Systems Commission.

"We're looking for a way to present information in an easily used format for people — information that changes frequently and is frequently referenced. We're doing a lot of pilots with different tools for that purpose."

One of the pilots involves food stamp policy manuals used by caseworkers. Two of Kentucky's 120 counties are participating in the development of an electronic manual that can be easily accessed and updated.

Dooley said he also wants to build a general purpose information bank where the public can find out how to do business with state government; the status on bids; and "general information on how state government operates: the players and organizations — types of things you can find out but it's often in two or three different publications that are outdated after a couple of months."

Dooley is a Kentucky native who left a position with the Federal Reserve Bank of Atlanta in 1977 to accept a job with the Kentucky Division of Computer Services in Frankfort — the state capital and his home town. Dooley rose through the ranks to the commissioner post in March 1984.

"In government, there is an opportunity to watch projects develop and actually see improvements in things that you've had a hand in," he said. "Sometimes in a corporation, you do not have as great an impact as you do in the government environment. Some things we get involved with impact most every citizen in the state. It's a real challenge being involved with these projects."

Dooley said his biggest satisfaction is "bringing people from different backgrounds, different agencies and different perspectives and getting them to work together, getting a consensus on what to do. Our biggest strength in the department



Photos by David Scilling

is the people. We have just outstanding individuals in both the management and technical perspective. They make my job easy."

Commissioner Duties

As commissioner, Dooley is responsible for the planning, development and operation of all government information systems within the executive branch. This includes establishing information strategies and policies for state government; development and support of automated systems for mainframes, departmental systems and microcomputers; and management of the Commonwealth Data Center and its statewide network.

Dooley, who reports to the Finance and Administration Cabinet secretary and serves at the pleasure of the governor, works closely with cabinet and agency management, the governor's budget and administration staff, and the Legislature.

The DIS, which employs 405 people and has an annual budget of \$27 million, has six divisions: Data Management; Information Resources Management; Operations; Special Projects; Systems Engineering; and Systems Support. Kentucky spent an estimated \$65 million on information technology in fiscal 1987-88, excluding higher education.

The department also provides staff to the commission, an independent agency of

state government charged with coordinating the statewide strategic planning for computerized information systems. The commission published the commonwealth's first strategic plan in December 1987 and the Kentucky Information Resources Architecture in conjunction with the planning process.

By law, the DIS commissioner is a member of the 16-member commission, which is comprised of representatives from state and local government and the general public. Dooley was elected to the chairmanship by the other commissioners.

"My overall function (at DIS) primarily is to provide direction to our different divisions," he said. "I work with the directors to set the overall direction and overall goals. I also make sure they have the resources and skills they need to accomplish their responsibilities."

"We're primarily a service agency. At the same time, our role is to provide leadership and direction through architecture. We try to dovetail those two things. We're dealing with numerous agencies, each one with its own set of priorities. We're trying to help them."

"The commission is the planning body — I'm just a member. They do the architecture. They have a lot to do with overall directions, strategies, and emphasizing or promoting things in state government."

The DIS "always keeps planning in mind while emphasizing services — they go hand in hand. I think there is a definite benefit of having a commission and a department at our level," he said. "It allows us to emphasize and give examples where technology has offered a solution. It gives visibility, especially when competing with other priorities."

"It's worked out this way for Kentucky. I'm not sure it would work in every situation. It takes a lot of work to make it work."

Negative Feelings Overcome

The evolution of information technology in Kentucky state government "has been a long, hard road," according to Dooley.

One of the biggest obstacles has been overcoming agencies' "negative feelings" stemming from the state's centralization and consolidation of computer services, he said. Computer operations were merged under one roof in 1973; applications development functions were combined in a separate department in early 1981.

The two functions were merged in late

"We feel we have an obligation to find easy ways to disseminate commonly used information electronically."

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1981 to create the Department of Information Systems.

When services were initially consolidated, the agencies were told, "Technology-related people on your staff are now with a new department and that department will charge you to use those services," Dooley said. "I can certainly understand the negative feelings — agencies are now paying an hourly rate to the people they used to have on their staffs... and they have no control.

"When I took over, the perception of our department was not real good among agencies. We could not do the things we felt we needed to accomplish if we were not on good terms with our customers."

Under Dooley, the DIS has focused on customer service to smooth over the hard feelings. "The only reason this department is here is to serve the other agencies," he said. "If we're not doing that, we're not doing our job. We've changed the job from strictly a control environment to a service environment. It has taken a lot of effort to try to be responsive instead of an impediment for an agency to get something done."

The rapid change in the marketplace triggered by the microcomputer presents another challenge. "Traditionally, we have been highly centralized, mainframe-oriented," Dooley said. "We're trying to



"We're trying to emphasize that there are multiple solutions — let's get the right fit for the right reasons."

"We want our agencies to be able to take advantage of all things out there."



Photos by David Sterling

"We're trying to find that medium-point between highly centralized and decentralized."

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"We have really tried to encourage people to use microcomputers — we consider departmental systems appropriate. We're trying to emphasize that there are multiple solutions — let's get the right fit for the right reasons. We're trying to get our professional people to look at it that way and support that solution.

"We're not downplaying the importance of the Data Center," he emphasized. "Certainly, small systems offer significant opportunities for improvement in state

operations. We want our agencies to be able to take advantage of all things out there."

Strategic Planning Emphasized

Information resources planning was consolidated through creation of the Kentucky Information Systems Commission by the 1984 General Assembly.

"The Legislature didn't know what was going on in information systems," Dooley said. "I think there had not been a great relationship between this department and the legislators. There was concern about some of the activities going on. The commission was the Legislature's answer to that."

There was a lot of "wheel spinning" during the commission's first year, according to Dooley. "We felt that if we were going to make the commission of value, we needed a focus and more defined charter."

Rather than getting involved in day-to-day activities, commissioners wanted to concentrate on long-term planning and strategy. They recommended that the original

legislation be amended to emphasize strategic planning.

The 1986 General Assembly directed the commission to establish and coordinate a statewide strategic planning process for automated systems in the three branches of state government and the constitutional offices.

The first biennial planning process was developed based upon the following premises:

- Government information is a valuable resource which has been entrusted to public officials and should be managed as such.

- The value of the state's information lies in its application. Information should be created or collected only to the extent that it has practical use in fulfilling the agency's mission.

- The public has right of access to governmental information, but that rights of access must be balanced by the individual's right to privacy.

- Agencies should identify their information needs and document how automated information systems fulfill those needs. To avoid duplication and maximize efficiency, agencies should consider obtaining information from existing sources or taking advantage of existing systems before spending funds to create entirely new ones.

- A primary procurement consideration should be compatibility with existing systems. This includes interconnectivity of processing devices as well as selection of software which facilitates data exchange within the agency or between agencies.

- Agencies must manage their records as an ongoing process.

- Managers are to be responsible for assuring that information within a system is protected and that controls are in place which assure that information within the system is being collected and used appropriately.

- Information resources are to be managed for the benefit of the commonwealth as a whole and the public at large.

Each agency is required to submit an

Stephen N. Dooley

AGE: 37

BIRTHPLACE: Louisville, Ky.

EDUCATION: Earned a bachelor's in industrial management from the Georgia Institute of Technology in Atlanta in 1973 and a master of decision science from Georgia State University in Atlanta in 1976.

CAREER: From 1973-75, worked at the Miami branch of the Federal Reserve Bank of Atlanta, initially as an associate systems analyst and later as a systems analyst. From 1975-77, was initially a planning analyst and later a com-

munications department manager for the Federal Reserve Bank of Atlanta. From 1977-80, was branch manager of traffic control for the Kentucky Division of Computer Services; from 1980-81, he was assistant director of telecommunications for the division. From 1981-84, was director of the Kentucky Division of Information Systems' Division of Systems Support.

PERSONAL: Lives in Frankfort with his wife, Cheryl, and sons, Andrew, 12, and Bradford, 8. Enjoys water skiing, playing softball and other sports, and attending his sons' soccer games. ■

Kentucky Technology Applications

The following are a few of the information technology applications in Kentucky state government:

- The Kentucky Automated Management and Eligibility System (KAMES) determines eligibility for food stamps and is being expanded to other assistance programs, including Families with Dependent Children and Medicaid.

When the integrated system is implemented, the commonwealth will have one statewide system that supports the administration of all assistance programs.

- "We implemented a system where each caseworker in the field in 120 counties does online interviews with their clients," Department of Information Systems (DIS) Commissioner Stephen N. Dooley said. "They input information as they go through the interview — a questionnaire-type deal."

If a caseworker has all the information, he or she determines on the spot whether the client is eligible for benefits. If more information is needed, the system automatically schedules another meeting with the client.

- The Data Dictionary contains information about computer systems residing on the state's mainframe computers. "It's an information repository that tells you what systems do what," Dooley explained.

- The Department of Information Systems, the Department of Education and IBM jointly developed and funded Project Vision, a computerized math skill presentation for first and second grades that combines interactive videodisk technology with a computer touch screen. It allows a student to work on the computer without a keyboard. The software reinforces concepts introduced by teachers in the classroom.

- In 1973, the Kentucky Board of Elections implemented the first automatic voter registration system. In 1986, a statewide version of voter registration, which provides county clerks online capability for maintenance of voter registration records, was implemented.

A vote tally system has been developed so county clerks can report election results to the state for federal and state offices.

- Kentucky is installing a statewide purchasing system that will be available to all agencies. "The purchasing system up to this point is primarily a manual process that involves lots of paper," Dooley said. "This, we think, will certainly assist in streamlining the process and getting a better handle on the types of information our people need to do effective purchasing."

- The DIS has formed a task force to develop standards and procedures that will enable geographic information system (GIS) resources to be shared across the Kentucky Statewide Network.

- The DIS is also looking at the feasibility of putting together an executive information system for financial management. ■

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Information Resources Plan to the commission, which makes recommendations to the governor's office and the General Assembly for use in preparing the biennial budget.

"We review them not so much on dollars spent but rather, is it reasonable?" Dooley said. "Does it have statewide potential? Should we support it? Does it relate to the overall business mission? Is it consistent with the architecture?"

During the first planning cycle in fiscal 1988-90, some agencies were hesitant about preparing the plans.

"Once they got into it, they found it was beneficial to involve their people in information technology," he said. "The first time was the hardest. Some things that didn't work have been revised. Planning is a process — not a project. You keep refining it."

Dooley said the DIS's relationship with the Legislature "has been very good since

the commission began focusing on the planning process. They (legislators) feel more comfortable having a group looking at what agencies are doing with information technology — someone with a background in information technology who can raise red flags if they need to be raised."

A four-member legislative subcommittee on information systems has been created. "We have made a strong effort to develop a good link with them. They oversee the review activity of the commission and my department. We've tried to develop a good relationship with them," he said.

Information Resources Architecture

The Information Resources Architecture is a framework of standards, guide-

lines and directional statements related to information resources management in the commonwealth.

The architecture was designed to promote and facilitate information and resource management across organizational and geographic boundaries. It provides guidance for planners, standards for implementation and a framework for resource sharing.

In the past, DIS's planning efforts dealt mainly with technology. With the adoption of the architecture, DIS is taking a broader view of information systems to consider the information itself as an asset which must also be planned for and managed.

The architecture is divided into three broad categories — technology, information and the organization — and three

levels of information management — state-level, departmental and desktop.

Applying Ideas

Dooley noted that the DIS "is covering twice as much area" despite a reduction in its staff by some 25 employees since its inception. "We've come a long way," he said. "Our people can feel good about themselves having been able to accomplish all that they have with virtually the same level of resources. I think that's a credit to them."

"We try to act upon people's ideas as well as our own," Dooley said. "If someone has a good idea, let's see if we can implement and put it to use. We want to be able to recognize a good idea or a possibility and put parties and resources together to apply technology to that issue." ■

Rochester P.D. To Mug With Still VHS

ROCHESTER, N.Y. — Two local area law enforcement agencies are exploring applications of electronic photography to identify and record images of arrested suspects with still video equipment.

Agents from the local FBI office and the Rochester Police Department recently used Kodak still video equipment to obtain hard copy prints of suspected criminals from surveillance video tapes.

The process uses electronic digital imaging to help convert the video signal to a color or black and white image. Thermal prints are then produced in 4- by 5.2-inch size using a color Kodak video printer.

Banks and convenience stores use VHS-type video systems for surveillance because they are easy to use and cost-efficient. The drawback for police work is the length of time it takes to translate video images to hard copy that can be used by officers. The process generally takes about two weeks, according to Dennis Penna of the Rochester P.D. Crime Analysis Unit.

But Penna said the Police Department is excited about the potential of electronic imaging when combined with same-day production of hard copy prints.

Electronic imaging equipment — designed by Edicon, a Kodak subsidiary in Brighton, N.Y. — is scheduled for installation by the end of the third quarter.

The first application of the new system will not be in conjunction with video surveillance, said Police Chief Gordon Urlacher. The department plans to use the equipment as part of a new computer mug shot system to help speed up the process of having victims identify criminal suspects.

"By comparing many physical categories of suspects, this system will help us narrow down the number of suspects much more quickly and efficiently than flipping through thousands of mug shots," said Urlacher. He added that the videotape surveillance application would be re-examined upon successful implementation of the computer mug shot system. ■

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The costs of free information

RICHARD A. GUIDA

THE FREEDOM of Information Act (FOIA) is revered by some, defamed by others, and unknown to most. It strives to make government more open and accountable, a goal that Americans embrace as essential to participatory democracy. The FOIA finds its staunchest supporters among university researchers, historians, and journalists. Newspaper articles prominently announce the source of information obtained under the FOIA, and editorial scorn routinely greets the failure of federal agencies to respond promptly and fully to FOIA requests. Those whom the FOIA benefits—either intellectually or financially—are quick to sing its praises. But the statute has had a number of unintended and perverse effects. Though Congress has taken some steps to address these effects, more remains to be done.

Congress enacted the original FOIA in 1966 as an amendment to the Administrative Procedures Act. Its stated purpose was simple: "To establish a general philosophy of full agency disclosure unless information is exempted under clearly delineated statutory language...." The statute did exempt several categories of informa-

tion, including classified material, business-proprietary material, information whose release would invade personal privacy, and other material whose disclosure would compromise the public interest. It allowed requesters to seek any written or recorded material in the possession of government agencies, but agencies were not obligated to create material to respond to a request. Requesters did not need to state their purposes in asking for the records, nor did they have to be U.S. citizens.

For several years after its enactment, however, the FOIA had little effect. Bureaucratic inertia, coupled with reluctance to open files for public view, resulted in only a trickle of information being provided to those who requested material under the act. As a consequence, Congress strengthened the law in 1974. Over President Ford's veto, it required federal agencies to respond to requests within two to four weeks, and to afford a simple, internal appellate process to assure uniformity of agency decisions. It also permitted federal district courts to intervene when agencies failed to meet their deadlines, and it empowered the courts to review agency decisions to withhold material; government officials found to be withholding information or treating FOIA requests in an "arbitrary or capricious" fashion faced statutory penalties. Finally, the 1974 amendments permitted government agencies to charge requesters only for the effort expended in searching for responsive material and for duplicating what could be released. In fact, agencies were encouraged in most cases to waive all fees.

At the time of the amendments, the House Committee on Government Operations asserted that for the entire federal government, "additional costs that may be required by this legislation should not exceed \$50,000 in fiscal year 1974 and \$100,000 for each of the succeeding five fiscal years." Total government costs since then have exceeded these estimates by amounts that would earn harsh criticism were they caused by errors in the executive branch. The FBI estimates that its FOIA costs alone exceeded \$55 million between 1974 and 1983; it had three hundred people working full-time to answer FOIA requests. By 1987 federal agencies were receiving a combined total of more than 375,000 FOIA requests annually, and spending almost \$60 million a year in order to answer them.

FOIA fees covered only about 5 percent of these costs. In calendar year 1984, for example, the Department of Defense (DOD) and its component activities received a total of 81,179 indi-

vidual FOIA requests, the vast majority of which sought more than one record, and some of which sought hundreds of records. The Department spent more than \$30 million in responding to those requests, but it recovered less than \$1 million from requesters.

The bulk of the expense results from something called the "segregability review": each document requested under the FOIA must be reviewed sentence by sentence to determine what material can be released. In the case of DOD documents, much of the material is either classified or protected under statutes governing unclassified military technology. Great care must be taken to ensure that no militarily sensitive information is released. In addition, when technical records are sought, the segregability review must be performed by people with the requisite technical and security training. Such experts are in short supply; handling FOIA requests is an unwelcome distraction from their important tasks.

Indeed, only senior DOD officials have the authority to withhold information under the FOIA. This restriction, though not explicitly required by the statute, is necessary to ensure that the correct decisions are made and that the Department's actions can be defended in the event of court challenge.

Finally, the FOIA enables requesters to bring legal action after the two- or four-week deadlines have passed. Since many requests involve large numbers of documents, including some that must be recailed from departmental archives, the deadlines imposed in the act often cannot be met. If a suit is filed as a consequence of "slow" departmental response, many (though not all) judges give the Department sufficient time to search for and produce responsive releasable material without undue disruption; most courts recognize that despite the contentions of those who demand the production of documents, the FOIA enjoys no special status over other statutes that agencies are obliged to obey or enforce. Even so, however, the Department must invariably defray the plaintiffs' legal costs.

FOIA uses and abuses

Though usually touted as a check on government, the FOIA is used most often by businesses seeking information on competitors. The material sought ranges from data provided by companies bidding on government contracts, to information provided by firms seeking licensing or approval of new products, to personnel data and financial material that companies are legally required to

report. The effect is particularly pronounced at regulatory agencies, as illustrated by testimony given by Food and Drug Administration officials shortly after the 1974 amendments were enacted:

Individual citizens were responsible for only eight percent of FDA's FOI requests in 1976 and the press and public interest groups were responsible for only about five percent. Most of the agency's FOI requests—more than 80 percent in 1976—originated from industry or persons working on their behalf.

In 1979 the New York Bar Association issued a report showing that the federal government's increasing regulatory role has encouraged commercial interests to put the FOIA to unexpected uses:

In enacting the FOIA, Congress intended to open the governmental process to increased public scrutiny. It was not Congress' intent that the FOIA be used as a *carte blanche* for unrestricted access to otherwise nonpublic information submitted by private citizens and businesses. Nevertheless, the trend among government agencies to require an ever-increasing plenitude of reports and information from the private sector has made the federal government's files a virtual treasury of valuable and sensitive information about private citizens and businesses. Increasingly, the FOIA has been used by various parties to unlock this treasury for the purpose of obtaining information that the government has collected from private concerns.

In the early 1980s, the FOIA showed it could be as much a burden as a benefit. Serious errors began to occur in processing FOIA requests, as agencies released corporate trade secrets that they should have withheld. In a notorious 1982 case, the Environmental Protection Agency mistakenly released the formula for a Monsanto Corporation herbicide, causing Monsanto to lose its domination of a \$450-million-per-year market. The *Washington Post* story on the case observed that

the law has been widely exploited by lawyers for clients who use the government data to develop strategies for fighting federal investigations, spying on the competition and discovering how strictly federal regulations are really enforced....

This and similar cases led Congress to amend the FOIA in 1986. Agencies now can charge the full cost of processing commercial enterprises' requests for information of competitive or commercial value. Further, private firms that submit information to the federal government are now required to identify whether the material is considered "business proprietary." When proprietary material is requested under the FOIA, the originator is asked to explain why the material is considered proprietary. The govern-

ment agency retains the ultimate authority to withhold or release the material, but the originator may challenge release decisions in federal court. Conclusive data are not yet available to establish whether business use of the FOIA has declined, but there has been one unmistakable effect: the care that federal agencies must devote to handling business requests has markedly increased.

Criminals also use the FOIA heavily. Prisoners use the law to seek information from law-enforcement files about who incriminated them; other criminals use it to try to avoid prosecution. In lengthy testimony before Congress in 1981 and 1983, William Webster—then the Director of the FBI—recited numerous examples of the FOIA's perverse effects:

We received informant information that Organized Crime members in the Detroit area have been instructed to submit FOIA requests in an effort to identify our sources.... [T]o date, thirty-eight members and associates of the Detroit Organized Crime Family have made requests.... [They] have obtained over twelve thousand pages of FBI documents....

From 1975 through 1981, over seventy members or former members of the Weathermen have made FOIA requests of the FBI.... [T]he FBI has released over 60,000 pages of documents concerning the Weather Underground....

FBI agents are investigating allegations of political corruption and gambling in a major metropolitan area. Several of the principals ... are ranking city employees. The central figure ... made a request under FOIA ... [and] claimed to a fellow employee that ... he could determine whether the FBI was investigating the matter.... In this case we furnished the requester some collateral records while advising that all other materials responsive to the request were being withheld on the basis of the exemption designed to protect pending investigations. By asserting the appropriate exemption, however, we confirmed that an investigation was under way. Soon thereafter, subtle changes were made in the operation, including the shift of personnel from the correct department to other duties. The purge successfully removed cooperative employees ... and completely disrupted the FBI's investigation.

The problem extends beyond the FBI. In 1982, for example, the Drug Enforcement Administration (DEA) reported that of four hundred sample investigations involving FOIA requests, all had been hurt and 14 percent had been aborted, significantly compromised, or reduced in scope. The assessment also indicated that criminals originate more than 60 percent of the FOIA requests that the DEA receives.

The FOIA has also been used to acquire technical material and other information of intelligence value. In the 1970s the Central

Intelligence Agency was the target of a concerted effort to obtain information that would uncover its agents and informants. The seriousness of this threat led Congress to an action that it was extraordinarily loath to take: in 1983 it made the CIA's "operational files" automatically inaccessible to FOIA requests, so that the CIA need not assert specific exemptions to keep the records in these files secret.

Also in 1983, Congress gave the Secretary of Defense specific authority to protect "technical data having a space or military application." Previously, federal agencies could not cite export-control statutes as a basis for withholding sensitive but unclassified technical data, because the FOIA exemption for statutorily protected information required more specificity than the export-control laws provided. Foreign interests accordingly used this loophole to receive technical data that would not have been released had an export license been sought.

While the FOIA's authors may not have foreseen how useful the FOIA would be to criminals and foreign agents, they did expect the news media to use it heavily. Use by the media, however, is uneven; some segments rarely use the FOIA, while others go on extensive fishing expeditions in hopes of catching something.

During one six-month period in 1984, for instance, *Washington Post* reporter Scott Armstrong submitted over a thousand FOIA requests to the Department of Defense. The documents that he sought included drawings of weapons systems, reports by the Inspector General, and the guides used to classify material in all three services. The Army duly accumulated the material and released the unclassified guides; the Air Force accumulated the material but then balked at releasing even the unclassified guides; and the Navy fought the request from the start, claiming that release of such compiled information would harm the national security. (The theory that unclassified information can become classified if compiled in certain ways has been sustained in court.) Only after the Navy alerted the DOD General Counsel did the services take a consolidated position, which was in close accord with the Navy's initial posture. The services' different reactions themselves received some newspaper coverage, illustrating that the news media are opportunistic if nothing else.

Some members of the media have an odd conception of the FOIA's purposes. As part of an "investigatory journalism" effort, a television station sought documents from a federal agency through

the FOIA. The agency concluded that the information in the documents would interest the general public, and rather than releasing the documents to the television station alone, it arranged for them to be displayed in the reading room of a local public library. Upon hearing of this plan, the reporter who had requested the documents called the agency, irate that her "scoop" would now be available to other newsmen. When the surprised agency representative replied that he understood the purpose of the FOIA to be to inform the public, the reporter announced that the purpose of the FOIA was to help the news media, which, like any other business, "has to sell its product."

The FOIA requests of public-interest groups may be as scatter-shot as those of the news media. At the Nuclear Regulatory Commission (NRC), for example, a total of almost five hundred FOIA requests were received during the first six months of 1986. Fully eighty-one were from the Government Accountability Project (GAP), an organization that regularly intervenes to oppose nuclear power-plant projects. The GAP also filed sixty-nine of the 104 appeals that the NRC handled in the first six months of 1986. The GAP's requests, moreover, have tended to be longer and more complex than others. One request, for example, involved the release of 114,000 pages and more than 1,700 staff hours of review. In all, nineteen public-interest groups submitted 149 FOIA requests to the NRC during the first half of 1986.

The FOIA is also used extensively by litigants in lawsuits involving the federal government. Lawyers often use the FOIA to supplement the legal discovery process, for three reasons: it is inexpensive, it has tight time deadlines that are enforceable by law, and it may produce material that is not available through discovery. In 1983 the Administrative Conference of the United States reviewed this problem and concluded that changes to the FOIA were essential to protect the government's interests in litigation. But the recommended changes were never enacted.

The FOIA's effects on documentation

Another of the FOIA's drawbacks has received less attention. Government officials now often avoid fully documenting the process used to arrive at a particular policy decision, for fear that much of what they write will be released under the FOIA. While such material is explicitly exempted from the FOIA as "pre-decisional," judicial interpretation of the exemption has given

bureaucrats cause for concern. For example, the U.S. District Court for the District of Columbia ruled in a 1985 suit that the factual information that led to a decision cannot be withheld under the FOIA—despite the government's arguments that the way such factual information is selected and presented reveals too much about the decisionmaking process. The effect is undeniable. A recent informal poll of senior executive-branch officials suggests that the FOIA has discouraged many of them from memorializing useful background information or otherwise treating their actions in writing. In the short term, this hesitancy may not significantly detract from the decisionmaking process. But in the long term, it is vital that the factors bearing on decisions be adequately recorded, to ensure that an official's successor fully understands the behind-the-scenes considerations that affected the decision.

Many in the news media predictably reject this view. But they are in no position to gauge its accuracy; journalists enjoy the blanket coverage of the First Amendment, which lets them keep secret every aspect of their work other than that which they choose to release—that is, publish. More to the point, common sense strongly suggests a conclusion diametrically opposite to that of the journalists. As one simple example, consider the plight of an administrator seeking to assess his agency's performance in some area. He naturally wants a candid, objective evaluation. But lest the FOIA be used to embarrass their boss and their agency, his subordinates might instead gloss over any biting findings in their written report, and convey those findings orally (or not at all). This scenario is not far-fetched; government employees are routinely reminded in meetings to be cautious about what they write because of the FOIA, and supervisors regularly order that all draft copies of reports be destroyed when the final document is issued. If the news media were to ask federal executives involved with a potentially controversial project or decision whether the FOIA affects what they and their staffs write down or how they conduct their affairs, the honest majority would in turn ask the reporters: "If someone could inquire into your files and background material, would it change the way you operate—and for better or worse?"

One further question should greet those who laud the FOIA as an essential tool in assuring open and accountable government: Why limit it to the executive branch? Shouldn't congressional offices be equally accountable? One would search the records in vain for an exploration of this question during the congressional hear-

ings on the original FOIA or its amendments. Equally unfruitful would be an exploration of the news media's coverage of whether the FOIA should be extended to Congress.

Proposed amendments

But despite its flaws, the FOIA is here to stay. It is both futile and wrongheaded to seek its repeal, since the statute does provide a useful and important window enabling the public to peer into federal government processes. Nonetheless, the window could be much better built. The following amendments should be made to the FOIA:

1. Requests for information should be limited to U.S. citizens, and to those who are not in prison or acting on behalf of prisoners.
2. All material from criminal investigations should be exempted from FOIA requests.
3. As suggested by the Administrative Conference of the United States, the FOIA should be changed to prohibit its use in the legal discovery process.
4. Time limits for responding to requests, particularly those seeking many documents or old material, should be substantially increased. The responding agency should be able to establish a schedule for responses which takes into account volume, age, complexity of material, necessary review time, and so on. A request for fifty documents comprising three thousand pages of classified material might face a standard response time of several months, while the current two-week deadline could continue to apply to simple requests.
5. The full cost of administering the FOIA should be borne by the users. Though the news media are now specifically exempted from FOIA fees, this exemption should be abolished. The fees should cover search time, segregability-review time, the effort required to decide whether to release material, and the cost of copying documents and mailing them to the requester.
6. The FOIA should be extended to cover congressional committees and agencies such as the General Accounting Office.

Until these reforms are enacted, the costs of "free" information will continue to counterbalance its benefits.

GOVERNING GUIDE



MANAGING
INFORMATION



MANAGING INFORMATION

This GOVERNING Guide is based on a recent study of the ways in which states use technology to manage information. *Managing Information Resources: New Directions in State Government* was prepared by Sharon Caudle, Donald Marchand and three



colleagues at Syracuse University's School of Information Studies. It is the first comprehensive study of state use of information technology.

Managing Information Resources examines the tactics being used to channel the rising tide of data in state government. The study, conducted in cooperation with the National Association for State Information Systems, was funded by Bell South, Digital Equipment Corporation, Electronic Data Systems, Bull Worldwide Information Systems, IBM, NCR, NYNEX Busi-

ness Information Systems, Plexus Computers, Prime Computer, Tandem Computers, UNISYS and US WEST Communications. Copies are available for \$50 from the School of Information Studies, Syracuse University, Syracuse, New York 13244.

By Harrison Donnelly
Curt Döty Illustrations



Transforming Chaos

When experts studied the state of Virginia's use of computers and other forms of technology in the early 1980s, they found a tangled mess. Not only were information services costly and labor intensive, but the responsibility for managing them was divided among three separate state offices. Meanwhile, little was being done to integrate different forms of technology, the purchase of new equipment was a complex process, and planning suffered as a result.

Over the next few years, Virginia state government officials pushed hard to develop systems that would put them back in control of this increasingly important aspect of state operations. Although certain problems persist, today Virginia boasts a number of policies and programs that are dedicated to improving the state's use of both technology and information.

The Old Dominion's efforts to bring order out of technological chaos reflect changes that are reshaping the way state and local governments do business. Keenly aware that the efficient management of information is crucial to their mission, policy makers have adopted a broad array of tactics and strategies designed to improve the way they employ computers, telecommunications, office systems and—above all—the people who oversee them.

The states appear to be succeeding in such efforts beyond expectations. In a report issued by Syracuse University's School of Information Studies in August of 1989, Sharon Caudle and Donald Marchand note that many states are making great strides in streamlining their information-resource management—that is, their control of the acquisition, use, transmission, and storage of information.

The 23 states surveyed are not sim-

ply installing new computers or telecommunications equipment. Rather, they are formulating by trial and error a new management discipline.

The stakes are high. Indeed, ready and reliable information about state programs has become so prized by state policy makers that decisions concerning its management have migrated from the computer room to the board room. Governors, legislators and top agency executives have all grown increasingly dependent on technology for the data they need to make decisions. To meet this demand, Caudle and Marchand believe, the focus of information technology must shift from the technical goals of specialists to the state government's overall mission.

On a scale unimaginable 10 years ago, the new information-management policies are transforming the work process and the nature of service delivery all across the United States. The reason: State governments are data-intensive enterprises. Far more than most industries of comparable size, state governments have a mandate to collect and utilize information, be it about welfare recipients, licensed drivers or schoolchildren.

The effective management of information resources thus promises to increase productivity in the states. "If you are going to improve the quality of state government," asks Marchand,

"where else would you look?" In the future, states will be judged on how well they define their information needs and how well they manage huge masses of information. State and local governments that succeed will prosper; those that do not may lag far behind.

In recent years, several factors have combined to inflate the importance of these issues. The policies of the Reagan administration, for example, shifted responsibility for many social programs onto the states. Simultaneous budget constraints, however, kept the states from hiring more people to cope with their new duties. Not only that, but most states had their hands full trying to assimilate an unprecedented series of technological and regulatory changes in the information field, including the influx of personal computers (PCs) into offices in the early 1980s and the court-ordered breakup of AT&T in 1984.

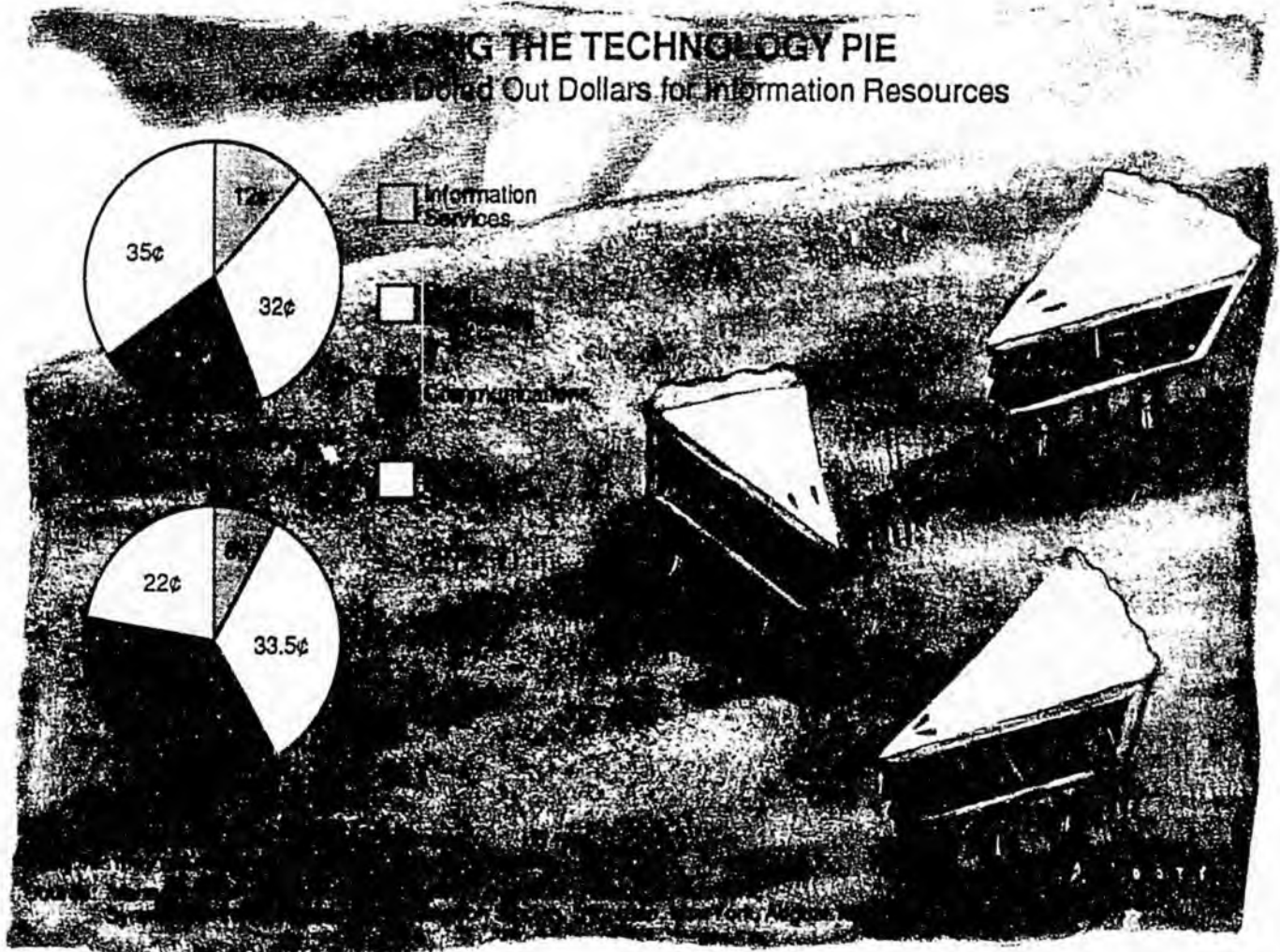
Despite the reality of budgetary pressures, Caudle and Marchand caution, the goal of information-resource policies is not solely to reduce costs; rather, it is to help states do what they do better. After all, governments are in the business of delivering services, not of saving money. Policy makers should therefore use the information resources at their disposal to deliver services more effectively—in short, to get more bang for the bucks.

COMING TO TERMS

Throughout their study, Drs. Caudle and Marchand distinguish between two carefully defined concepts. They use the term "**information resources**" to signify everything from information itself to the machines that manipulate it to the manpower and money involved in the process. "**Information technologies**" has a more specific meaning. It denotes computer hardware and software, telecommunications devices that handle voice, data and video messages, and office systems—that is, high-tech tools such as electronic mail, facsimile machines and bar-code scanners that promise to increase worker productivity.

MISSING THE TECHNOLOGY PIE

How States Dished Out Dollars for Information Resources



For many states, the implementation of successful information policies has been a Sisyphean struggle. Inevitably, conflicts and obstacles arise, ranging from a lack of political support for change to tensions between state agencies accustomed to doing things their own way.

The process has also been costly. Using an estimate of per capita spending for a wide range of technologies, Caudle and Marchand calculate that state executive branches spent \$19.9 billion on information-resource management in fiscal 1989. That is roughly equal to what the federal government is thought to spend on similar efforts and nearly double the

\$10 billion estimated for comparable municipal spending.

After studying the field for a year, Caudle and Marchand advise each state government to design an information-management strategy that accords with its own politics, resources and traditions. While flexibility is the key, equally valuable is vision—a top-to-bottom understanding of the importance of information and the need to improve its management.

Six Sample Cases

To better understand the challenges facing states that institute new information-management policies, Cau-

dle and Marchand made an in-depth study of the process in six states: Florida, Kentucky, Minnesota, New Jersey, South Carolina and Virginia. (The other states included in the study are: Arizona, California, Colorado, Connecticut, Delaware, Maryland, Massachusetts, Michigan, Montana, New Hampshire, New York, Oklahoma, Oregon, Texas, Utah, Vermont, Washington and Wyoming.)

Although each state's experience was distinctive, their motivation for the change came from the shared realization, early in the 1980s, that state government employees were ill-prepared for the information explosion.

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A MAN AND HIS DATA: STEVE DOOLEY OF KENTUCKY

For Steve Dooley, Kentucky's commissioner of information systems since 1984, improving the state's management of information resources has been the fruit of a simple seed: getting people in state government to talk to one another. "A big part of it is just starting a process of communication," says Dooley, "and getting the key people to think alike."

Dooley seems to fit an archetype defined by Caudle and Marchand—that of the state official who can articulate a vision of where the government needs to go in the field. As Dooley sees his role, a crucial first step on the road to more effective data management is getting people's minds off the narrow topic of equipment and onto the broader question of their information needs and how to meet them. "We've tried to change the way people view information," he explains. The ideal is to consider information as "an asset, rather than just concentrating on what type of computers we have."

A vision such as Dooley's takes time to implement: Kentucky has been working since July 1977 to set up an organizational structure and planning process to better manage its information. That glacial pace notwithstanding, the state has managed to skirt some of the obstacles that other states are now meeting head on.

"A lot depends on the environment," says Dooley. "We've come from a very centralized perspective and have been moving toward a more decentralized environment. But other states have had problems when they've started with a decentralized environment and tried to go in the other direction."

For Kentucky, a key tool in the process has been its

regularly updated "architecture" document, which charts the state's course in information resources. The document spells out standards and policies which government officials then seek to apply.

An advantage of this architecture, Dooley notes, is that it presents the state's overall information-management

goals without dictating how they are to be met. "Since users have a road map of the direction the state is going," he says, "the architecture helps make their decisions easier. But it's not a document that says, 'Everyone has to follow this all the way down the line.'"

Kentucky's priority at the moment, says Dooley, is to expand the universe of people who benefit from the state's information resources: "We're working more and more on how to

get information to people—not just to state and local government personnel but also to the public at large." Toward that end, Kentucky officials are in the midst of converting government information now on paper into electronic form. This will make data on, say, state procurement practices more readily available both to state employees and to small firms eager to do business with the state. The frequently changing rules on distribution of food stamps, to cite another example, can be put on-line to keep human resource personnel up to date without constantly consulting massive policy manuals.

As evidence of its dedication to effective information management, Kentucky is extending its efforts to the local level. "By learning who the people are that we need to talk to, and by being more aware of their needs," says Dooley, "we've begun to build bridges with the local governments."



Dooley: Information is an asset; its management involves far more than choosing computers.



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sion already under way. PCs were pouring into offices, and deregulation had made a complex thicket of telecommunications policies that once consisted of nothing more involved than paying the phone bill. To cope with this rising tide of technology, state officials realized, would require a large dose of proactive management—the practice of addressing problems before they arise.

The result has been a textbook experiment in federalism. Each state has found its own way, formulating laws, executive orders and policies designed to manage its information resources more coherently than in the past. Not only have the states' experiences varied widely, but individual agencies within each state have had to customize policies to suit their own particular needs. The use of computers in a corrections department, for example, differs significantly from computer use in a human services agency.

Not that every state is reinventing the disk drive. By sharing information among themselves, many states have adopted ideas and approaches that were first put into practice elsewhere. Still, cooperation can go only so far. No matter how good a borrowed strategy may be, it will not work unless officials tailor it to their own state's culture, politics and governmental structure. Anyone who neglects this fine-tuning of an information-management agenda is likely to experience a discordant period of implementation.

The six states in the case study ran the gamut of organizational models, from centralized (Florida) to decentralized (South Carolina). In each model, the management of information resources has evolved successfully.

For a number of reasons—among them personalities, priorities and resources—other states have not matched the progress of the six test

cases. Louisiana and Mississippi, for example, have been held back by budget problems, while Texas officials cannot agree whether to make changes through a single policy imposed from above or through individual initiative by the state's highly decentralized agencies. Even though several agencies in the state have developed effective policies on their own, Marchand observes, comprehensive changes in a state as loosely organized as Texas will take a long time.

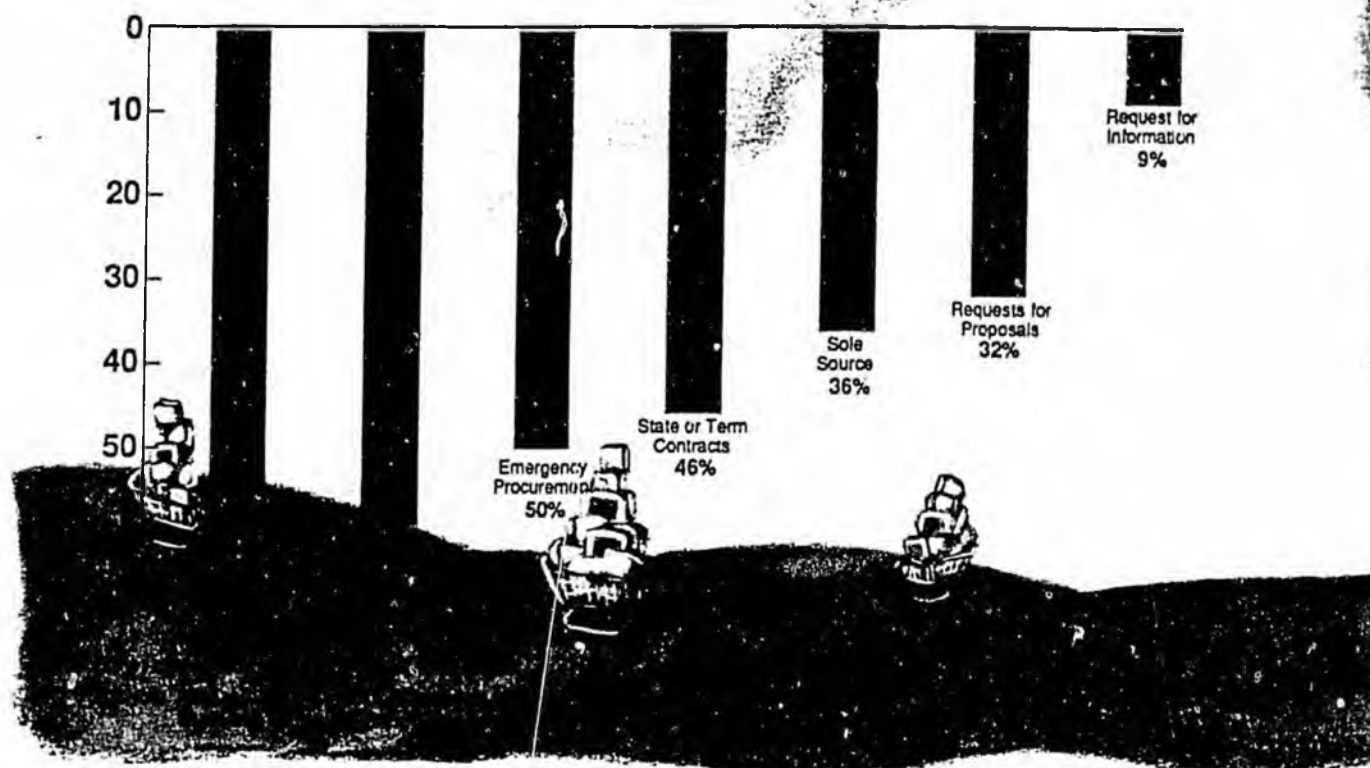
In the test states, meanwhile, progress in managing information resources has been more concrete but no less arduous. A number of distinct steps seem crucial to success. First, state officials must be made aware of any weaknesses in their government's information management. In South Carolina, for example, officials were alerted to this condition by a 1981 report from the University of South Carolina that spotlighted deficiencies in the state's use of telecommunications, data processing and office systems. Next, states must establish an organizational structure for the overall management of information resources. In Florida, a 1985 law created the Information Resource Commission, an oversight committee with a charter to coordinate the state's efforts in years to come. Finally, states must devise a planning process, adopt goals and—as have Kentucky and Minnesota—create an information-management "architecture," or overall framework of standards, policies and guidelines.

All that takes time. Yet state government information managers operate under political pressure to produce quick results. Elected officials seek to make changes during their term in office, but most management functions tend to evolve over a far longer time span; designers of effective information policies follow a long-

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PROCUREMENT: THE SAVINGS

Methods of Procurement



Public managers seeking to contain costs may be able to reap substantial savings in the area of information-technology expenditures. State governments' procurement of information technology, says study co-author Donald Marchand, represents "the only area where significant cost savings are possible. Major economies can be achieved by focusing on procurement."

The sums spent on procurement in the past hint at the savings possible in the future. In fiscal year 1989, the report's authors estimate, the 50 state governments shelled out nearly \$20 billion—an average of \$36.50 per capita—for information resources. Purchases of information equipment and related expenses consumed nearly 2 percent of the states' budgets, with salaries factored in,

that average rose to 3.4 percent. New York alone spent \$15.8 million on computer hardware—plus \$4.4 million on software—in FY 1987-1988. Meanwhile, outlays for state governments nationwide continue to grow at an estimated rate of 7 percent each year.

As Caudle and Marchand acknowledge, such estimates are a far cry from hard and fast statistics, and the imprecision shows that the states have only a vague idea of the amounts they are spending on information resources. The culprit: outmoded accounting systems that are either too crude or too complex to accurately track information-technology expenditures. Some states, for example, lump purchases of computers and bulldozers together as capital-equipment costs; others record every purchase in unnecessary detail, frustrating managers.

PLACE



says Marchand. "You can't manage what you don't see."

Marchand and Caudle have pinpointed several procurement policies that contribute to the muddle. Many states have allowed individual agencies to decide what sort of equipment to buy and how much to pay for it, leaving the central state government ill-informed about which computer and communications systems are in place. The result is often a jumble of incompatible technologies. "You can't leave purchasing totally to agencies," says Marchand. "You can't have 70 different types of PCs and five different operating systems that you can't link together."

Many states are striving to become smarter shoppers in the information-technology marketplace. In Kansas, Mississippi, and Oklahoma, the state acts as a single con-

sumer where information technology is concerned. This "one-buyer" approach enables the state to take maximum advantage of its considerable marketplace leverage, acquiring the best equipment at the lowest cost. The tactic also promotes the use of standardized, compatible technology, allowing states to follow an economical, "hand-me-down" approach in which outdated or outgrown equipment can be passed on to smaller or less automated offices.

In most states, the decision to purchase any type of information technology involves several separate state offices. Usually one office reviews the need and the proposed purchase, a second office approves the purchase and a third office actually makes the purchase. A number of states are experimenting with giving a single information technology office the authority to control all or part of this process. Other states are finding value in adding yet another layer to the process for particularly large purchases. Florida's Information Technology Resource Procurement Advisory Council reviews all information resources acquisitions that cost more than half a million dollars over a two-year period.

Another approach is to encourage competitive bids before awarding a contract. Still another is to establish tough ethics codes that prevent conflicts of interest in purchasing. South Carolina, for example, has adopted special guidelines governing the procurement of information technology. These rules ban the unauthorized release of proposed procurement needs, informal contacts between responsible government officials and vendors, and the tailoring of specifications to a vendor's products. Just knowing what the state owns and keeping track of it can improve procurement notably. Nine states in the study have installed or will soon install computerized inventory systems to keep tabs on all purchases. New Jersey's system, on-line since 1986, provides users immediate access to the inventory of hardware and software maintained by the state telecommunications and information systems office—what it is, where it is, what it cost, how old it is, and who uses it. The same system generates inventory reports, both general ones and site-specific ones, detailing what equipment is actually at a particular location.

Ultimately, says Marchand, the key to efficient procurement lies in a flexible outlook. States should focus on setting guidelines and negotiating large contracts, he believes, while giving individual agencies leeway to select the technology that suits their own particular needs.



(continued from page 13A)

term strategy, which may not yield tangible results for another 5 or 10 years, when many current officials will no longer be on the scene. As one state official commented, "To be effective, information-resources management needs more than legislative support—it needs mechanisms and education and time."

The quandary is thus one of deferred versus immediate gratification, and nowhere is it more acute than in budget issues. Information reforms typically cost a good deal of money in the short term, yet they are unlikely to produce significant savings for several years. As one state official put it, "A short-term cost is a long-term productivity gain."

The slowness of the process even in successful states, say Caudle and Marchand, does not indicate that managers have failed to act quickly. Rather, it stems from a basic fact of human nature: To change behavior or a way of thinking takes time. People in government must be educated to tackle their jobs from a statewide perspective, rather than from a parochial view of one agency's needs. To substantiate this argument, Caudle and Marchand point to other management changes of comparable scope that have taken as long or longer: After nearly 30 years, they point out, the most recent wave of state executive-branch reorganizations is still going on.

To Centralize or Not?

As in other government domains, the question of centralized control in the states' management of information has sparked considerable debate—even acrimony. At issue is whether state information managers will impose government-wide policies or foster agency innovation.

The heart of the matter is the

The Top Twelve Tools

Type of Technology	Percentage of States* Using It
Electronic Mail	64%
Voice Communications (e.g., voice mail, call-handling)	55
High-capacity Storage (e.g., optical disks)	50
Image Processing/Electronic Data Exchange	50
Distributed Processing	41
Scanning Devices (e.g., bar-code readers)	41
Teleconferencing	36
Desktop Publishing	36
Advanced Computer Graphics	36
Fiber Optics	32
Portable PCs	32
Facsimile Machines	32

*Twenty-two states were surveyed.

Source: *Managing Information Resources: New Directions in State Government*, Syracuse University School of Information Studies, Syracuse, New York, August 1989.

central state information offices. Despite their differing titles, each such office is usually responsible for the same task: to coordinate information-management policy statewide.

Too often, however, these central offices have tried to fill too many roles. In addition to formulating and communicating an overall policy direction for the state, they have attempted to provide data processing and other services to the state's agencies. As one state official points out, this very diversity has created friction: "First, our role is regulatory; we review agency proposals and we can reject them, and that paints a certain image of our organization.

"Second, we are facilitators," the official continues. "That's our most important hat to wear, to make sure that good ideas get through the process." In addition, he continues, his office functions as both consultant and overseer. "All those roles are hard to

reconcile," he concludes, "and the seeds of adversity will always be there as long as we are in those roles. Plus, they all happen in a political context."

Permeating the conflict between the central state offices and the agencies they oversee is the dynamic of service versus control. Because they are often under political pressure to rapidly improve state operations, the central offices risk becoming sidetracked by a desire to keep the agencies in line. As one state office manager has observed, "We were trying to control processes and trying to provide services, and we really enjoyed the control much more. Agencies were building their own systems and buying personal computers, and that was an affront to us; we were losing power and control."

The state agencies, for their part, welcome the help of the central information office but resent the control, even when it is part of a larger effort to coordinate policy. Many agencies



have viewed the central office as an incarnation of "Big Brother," sometimes even lobbying to overturn its influence. "The central offices should act like a service organization, not like prima donnas," says one agency official. "They need to facilitate, to be technical advisers, to assist; they are a means to an end, not an end."

One item that was certain to kindle emotions in the past was the planning process. In their early years—from 1980 to 1985 or so—many central offices required the state agencies to report in excruciating detail on their information resources and needs. The result: a planning process that was costly, complex and unusually taxing.

Florida officials, for example, still

remember with rancor generating massive planning documents on tight deadlines. According to one agency manager in the state, the central office demanded to know "how many printer ribbons you wanted to buy. The level of detail in the first plan was crazy." Worse yet, the planning documents so painstakingly assembled seemed to have little impact on the state legislature's budget decisions.

Many of the tinderboxes that touched off those battles have since been shelved. One key step has been to subdivide the functions of the central office, leaving one organization in charge of policy and planning and a second responsible for providing services.

A newborn service ethic in the cen-

tral state offices is also helping to defuse the power struggle. Where state agencies once had no choice but to rely on the central data center, end users in those agencies today enjoy many more options—including processing the data themselves or taking it to a private provider. The central state information offices, whose operating budgets are underwritten by the state agencies they serve, must therefore work harder to "sell" data-management services to their "customers."

Meanwhile, a number of states are actively exterminating the bugs in the planning process. In Florida, for instance, central office officials have removed several layers of the detail once required in agency reports. And South

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Carolina agencies, which initially resisted centralized planning, now acknowledge that the central state office promises to improve, not expropriate, their use of information resources. South Carolina agency officials report that centralized planning has helped the state to organize information based on its overall needs, rather than on the type of data housed in each agency. "For the first time," notes one Paimetto State official, "we have grouped information in state government according to whom the information serves and what it does, regardless of agency structures."

Essential to the new accord between once-warring factions is the recognition that the central state office can provide

overall policy direction without micromanaging every aspect of the agencies' information resources. "The successful states," says Marchand, "are those that have de-emphasized control and are stressing mutual support."

A Sampling of Successes

Turf battles aside, many states have succeeded in introducing effective information-management policies. "A lot more states have made progress than we anticipated," says Marchand. "The momentum looks solid. Other states besides the ones we studied are progressing as well."

The states' rate of advance is not really that different from the evolution

of other management functions, notes Marchand, "except that it is taking place in the context of the fastest-changing technology the world has ever seen."

The Caudle-Marchand report identifies a number of domains in which the states have significant accomplishments. They include:

- **Automation.** Most states have automated their administrative systems and are now working hard to automate service delivery as well. In South Carolina, for example, a 1987 study found that 80 percent of state agencies had automated key financial and personnel systems; a majority had done so for budgets, procurement and inventory control.

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The sheer magnitude of the states' computing resources hints at the degree of progress so far. In 1988, Caudle and Marchand estimate, 47 states owned a total of 197,300 microcomputers, a 17 percent increase over 1987. California alone operates 35 mainframe computers, nearly 800 minicomputers and more than 14,000 PCs. The state government's largest computing facility, the Teale Data Center, hosts 15,000 terminals executing 1.8 million transactions a day.

• **Telecommunications.** Nineteen of the 23 states surveyed have in place or are planning to install a communications network able to integrate voice, data, video and image communications. Seven states—Florida,

Maryland, Montana, Oregon, South Carolina, Texas and Washington—have already developed extensive networks. Florida's SUNCOM network, for example, can handle both digital and analog data communications. The state's transportation department boasts an analog microwave system, while its department of environmental regulation recently unveiled a system for voice teleconferencing.

• **Innovative technologies.** States are devoting substantial resources to cutting-edge technologies that promise to improve everything from service delivery to regulation to decision-making. Many agency officials are introducing technologies that aid end users, such as portable PCs, facsimile machines and

desktop publishing systems, while state administrators are seeking overall improvements in air communications, data access and document handling.

Some states have even established formal organizations to investigate and apply new technologies. In Minnesota, for example, this role is played by a governmental arm known as the Technology Futures office. In California, meanwhile, state-run data centers have joined forces with private industry to examine how the state might make better use of its minicomputer workstations and Local Area Networks (LANs). An office in the state's health-and-welfare data center is even developing an "expert system"—a

(continued on page 25A)

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THEORY INTO PRACTICE

The Syracuse survey uncovered scores of innovative technology uses: some of the more imaginative ones are described below. Although these applications come from a diversity of state programs, they all have two goals in common: to make government workers more efficient and to improve services to the public.

One widely adopted system draws on data-handling technologies that were first developed for automatic-teller machines and supermarket checkout devices. California, for example, is working to replace driver's licenses and ID cards with magnetic-strip cards containing digitized images of photographs and signatures. Such cards would allow information about individuals to be recorded by mechanical card readers, rather than transcribed by hand.

In Michigan, meanwhile, state residents can use "opportunity" cards to gain admission to education and training programs. Citizens of Massachusetts can use "smart" cards to confirm their continued eligibility for health and welfare benefits, while their counterparts in Washington may be able to verify their eligibility for unemployment benefits by using a push-button telephone. In New Hampshire, automatic-teller machines are selling lift tickets at state-owned ski resorts, while in Oregon the same type of machines are being used to deliver welfare benefits.

Other states are using information technologies to track items that would be too difficult or time-consuming to follow manually. Colorado, for instance, keeps an eye on stream flows—and possible floods—in the state's rugged terrain via satellite, while Oregon has a weigh-in-motion system featuring electronic sensors that read special license plates mounted on trucks rumbling down the state's highways. Califor-

nia has a computerized inventory of state real property holdings, organized by agency and location.

A number of systems aim to make information more accessible to state workers. Bank examiners in New York and Florida, to cite one such case, can call up and record data about financial institutions on laptop computers. Welfare workers in Florida can also use an on-line system to summon forth information about recipients of the state's social service programs.

Automated fingerprint retrieval systems are in use in California, Maryland, New York, Oregon and Wash-



ington, while Florida has both that system and one providing access to criminal records as well as prints. Delaware is using videoconferencing to conduct arraignments of prisoners without the security risk of transporting them from jail to court. California is experimenting with using personal computers and video discs to teach young offenders to read.



(continued from page 23A)

computer program that incorporates the expertise and ratiocinative techniques of human specialists—that will help government employees prepare and review certain types of claims.

• **Sharing information.** For reasons that ranged from the pure to the petty, many state agencies once resisted sharing information among themselves. Some were genuinely concerned about possible violations of privacy laws, while others bridled at the prospect of losing their identity within the state bureaucracy. Today, by contrast, a number of states are striving to implement a multifunctional approach to information management, maintaining their data in a single archive benefitting

a variety of agencies.

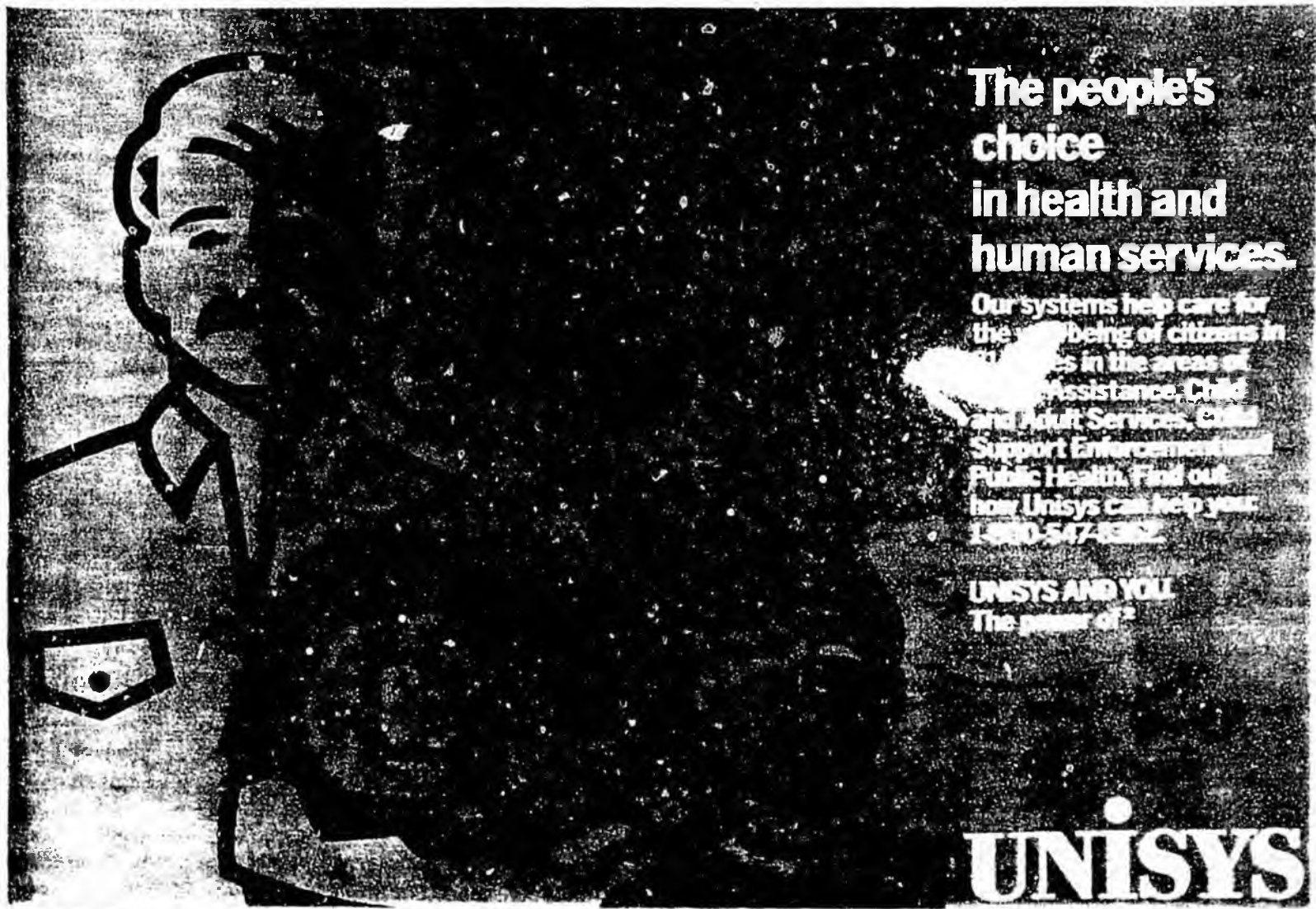
The multifunctional approach has worked especially well in human services. Utah is devising an on-line database of clients that will enable state workers to determine a resident's eligibility for welfare and other aid. Florida is developing an on-line network that will furnish information about the state's provision of welfare, food stamps, Medicaid, child-support enforcement and refugee assistance. A third state, New York, is working on a "Crimenet" database that aims to bring together information about the state's criminal justice, prison and probation systems.

The statewide sharing of resources has also encouraged the compilation of new geographic information systems

(GIS), which combine data from a variety of sources to reveal details about a specific region. Minnesota has assembled a GIS that interweaves data about each county's business patterns, labor force, population, agriculture and land ownership, while New York has pioneered the use of a GIS for assessing property taxes.

• **Cooperation.** A spirit of cooperation between the executive branch and the legislature characterizes state efforts to improve information management. Agency officials are working to educate and involve key legislators in the process, while lawmakers have become keenly aware of the merits of sound data-management policies.

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THE HUMAN FACTOR

As state governments seek better ways to manage data and technology, they often overlook a key element: the employees who use those resources on a daily basis.

No longer is the management of information resources a computer-room pursuit: as of 1989, Caudle and Marchand estimate, more than 420,000 state executive-branch jobs existed in the field. That figure is nearly 20 percent of all state executive employees, excluding educational personnel.

One problem: salaries for state employees involved in information resources pale beside those in private industry. Florida found that state telecommunications workers are paid 29 percent less than in private industry, while state computer personnel receive 18 to 50 percent less. To remedy this, some states are setting higher rates for new positions and upgrading the pay for existing jobs.

Recruiting employees has become a thorny proposi-

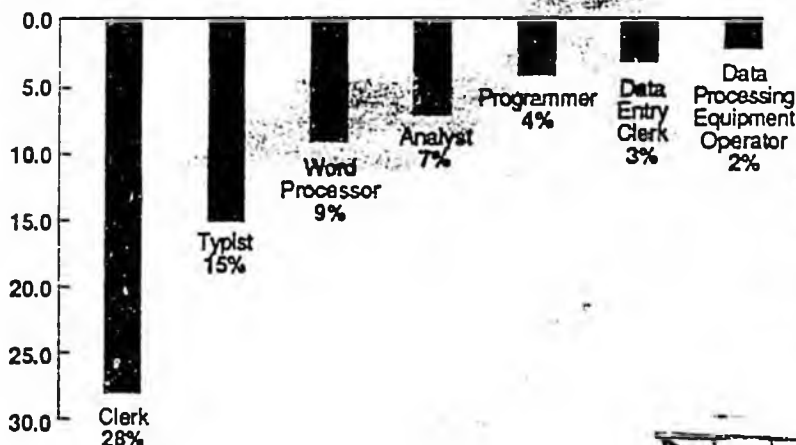
tion at best, while attrition has begun to take its toll among skilled personnel. In 1985, Florida estimated that its turnover rate for employees involved in data processing was three times that of private industry.

A bright spot, say Caudle and Marchand, is training. Most states offer their employees a wide range of sophisticated courses at little or no cost. But even there, tunnel vision can set in. Although many states instruct their workers in how to operate available equipment, the optimum use of information resources demands that the entire work force be trained. "If you're going to improve the quality of service," says Marchand, "you have to pay more attention to human development."

"Corporations spend huge amounts to train their work forces," Marchand observes, "but there has been no comparable emphasis in state government. The need for training isn't taken seriously enough in the public sector."

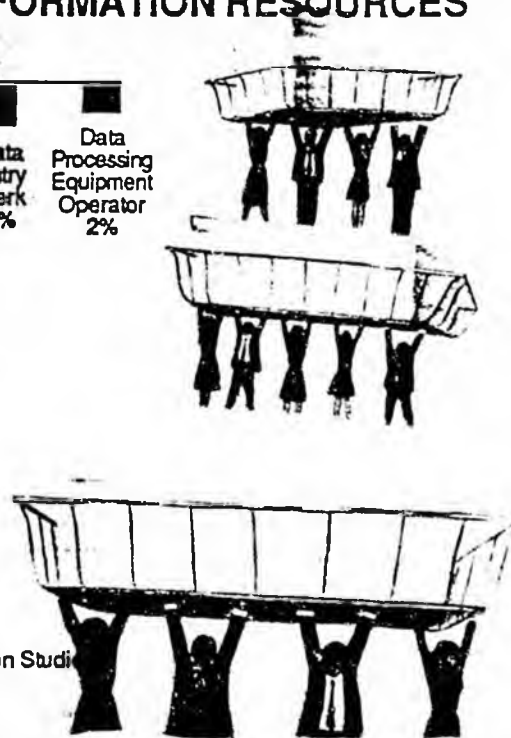
THE ROLES PEOPLE PLAY IN INFORMATION RESOURCES

(In percents)



Note: Based on information gathered from 21 states

Source: *Managing Information Resources: New Directions in State Government*, Syracuse University School of Information Studies, Syracuse, New York, August 1989



THE EIGHT COMMANDMENTS OF DATA MANAGEMENT

1. Information is a valuable government asset; it should be managed to benefit the people.
2. The public should have access to government information, unless such access would jeopardize the privacy of any individual.
3. Information belongs to the government as a whole; agencies are only its keepers and should share it widely among themselves.
4. The information technology employed by a government should encourage all branches of the government to communicate freely with one another.
5. Agencies should collect only the information they need, and managers should seek to minimize the burden on those who must provide it.
6. Governments should develop—and adhere to—a clearly stated design of how they intend to handle information.
7. Because most information is time-sensitive, governments should consider how old their data is in deciding what to do with it.



8. Standards serve a purpose. Governments should strive to get the best technology quickly and economically.

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"The legislators are coming more and more from businesses that are automated," observes one state office manager. "We don't need to tell them a second or third time about the difference that information technology can make in management, in analysis and in program decisions. They are experiencing it in their own businesses."

1990 and Beyond

Despite this evidence of success, Caudie and Marchand remain realistic about the challenges facing states. The architects of tomorrow's information policies, they note, today face tight budgets, high expectations on the part of political leaders and the

need to comprehend ever-more-complex technologies. Moreover, say the report's authors, some states may not be able to sustain their progress toward better use of information resources; initiatives that succeed early on may later founder because of problems with the state's politics or economy. "States are still a long way from realizing the real payoffs," Marchand believes. "It's not something where you can say, 'They're there now!'"

In the 1990s, as states struggle to move from an emphasis on technological concerns to a broader focus on information-management issues, they will continue to face an array of vexing questions. One is the lack of understanding within state governments of the capacities of computers other than

traditional mainframes and of the potential benefits of a statewide approach to information management. Despite intensive educational efforts within the state, notes one official, "We are still grasping for [computer] literacy." In addition, state efforts in this area need leaders who can alert people in government to the dynamic potential of information-resource management.

A prime source of frustration is that the states' fragmented data structures can keep information managers from answering simple yet significant questions posed by state government executives. Until recently, for example, no one had thought to integrate data on recipients of food stamps with information about Aid to Families with Depen-

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CONTACT POINTS

For more data on managing data, call the state contact person, designated by the National Association for State Information Systems:

- ALABAMA: Rod Benton, Finance Department, (205) 261-3104; James H. Rowell, Finance Department (205) 261-7160
ALASKA: Paul Monette, Department of Administration, (907) 465-2200
ARIZONA: Ben Froehlich, Department of Administration, (602) 255-2250
ARKANSAS: Robert McQuade, Department of Computer Services, (501) 682-4302
CALIFORNIA: Ron Kuhnei, Department of Finance, (916) 445-1932; Faye Miyagi, Teale Data Center (916) 445-2910
COLORADO: Hans Hultgren, Department of Administration, (303) 866-3222
CONNECTICUT: Franklin Johnson, Administrative Services, (203) 566-2747; Charles Miller, Information Systems, (203) 566-7093
DELAWARE: Dr. John J. Nold, Office of Information Systems (302) 736-9628
DISTRICT OF COLUMBIA: Michael Stover, Information Resources, (202) 727-2277
FLORIDA: Mike Hale, Information Resource Commission (904) 488-4494
GEORGIA: Howard Hughes, Department of Administrative Services, (404) 656-3992
HAWAII: Dr. Norman Okamura, Department of Budget and Finance, (808) 548-5910
IDAHO: Loren A. Nelson, Administration Department, (208) 334-3382
ILLINOIS: James Norris, Central Management Services, (217) 782-0862
INDIANA: Robert Primavera, Information Services Division, (317) 232-5995
IOWA: Dale L. Nelson, Department of General Services, (515) 281-5503
KANSAS: Russell W. Getter, Department of Administration, (913) 296-3463
KENTUCKY: Stephen N. Dooley, Finance and Administration, (502) 564-7777
LOUISIANA: Dr. Allen Doescher, Division of Administration (504) 342-7000; Sylvia Vaught, Division of Administration, (504) 925-1755
MAINE: Arthur W. Henry, Jr., Bureau of Data Processing, (207) 289-3631
MARYLAND: Robert M. Bassford, Budget and Fiscal Planning, (301) 974-2280
MASSACHUSETTS: James Corum, Administration and Finance, (617) 727-2160
MICHIGAN: Robert Stewart, Department of Management and Budget (517) 373-7326
MINNESOTA: Judith A. Pinke, Department of Administration, (612) 297-3988
MISSISSIPPI: Frank Stebbins, Central Data Processing Authority, (601) 359-1395
MISSOURI: Daniel Sterdley, Data Processing/Telecommunications (314) 751-1516
MONTANA: James F. Christnacht, Department of Administration, (406) 444-2700
NEBRASKA: Charles Taylor, General Data Processing, (402) 471-2065; Ernest E. Kovaly, Computer Network, (402) 472-3701
NEVADA: Hale Bennett, Department of Data Processing, (702) 687-4090
NEW HAMPSHIRE: Frank Champa, Division of Information Services, (603) 271-3763
NEW JERSEY: Henry J. Murray, Department of the Treasury, (609) 530-6078; Marilyn Blazovsky, Department of the Treasury, (609) 530-6090
NEW MEXICO: Gerald S. Ralston, General Services Department, (505) 827-2001
NEW YORK: Frank Giannetti, Office of the State Comptroller, (518) 283-0387
NORTH CAROLINA: Charles R. Williams, Information Services, (919) 733-5555
NORTH DAKOTA: Jim Heck, Central Data Processing, (701) 224-3190
OHIO: Margaret Theibert, Department of Administrative Services, (614) 466-5083
OKLAHOMA: Thomas R. Terry, Gene Hobbs Office of State Finance, (405) 521-3463
OREGON: Gerald C. Schmitz, State Executive Department, (503) 378-3161
PENNSYLVANIA: Joseph Connovitch, Technology Management, (717) 787-9107
RHODE ISLAND: George Patton, Department of Administration, (401) 277-2276
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SOUTH DAKOTA: Jeff Stroup, Bureau of Administration, (605) 773-3688
TENNESSEE: Bradley S. Dugger, Finance & Administration, (615) 741-3700
TEXAS: Lynn Polson, Information Telecommunications Council, (512) 463-5530
UTAH: David L. Johnson, Department of Administrative Services, (801) 538-3450
VERMONT: Bruce MacDonald, Department of General Services, (802) 528-2334; Gerald R. Gingras, Agency of Transportation, (802) 528-2581
VIRGINIA: Michael J. Durkin, Information Technology, (804) 225-2423
WASHINGTON: Nancy Abraham, Department of Information Services, (206) 586-5555
WEST VIRGINIA: Rouse Chambers, Finance & Administration, (304) 348-5310
WISCONSIN: Thomas E. Alt, Department of Administration, (608) 266-1774
WYOMING: Joe Snow, Department of Administration, Fiscal Control, (307) 777-7801



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dent Children. As a result, information officials in most states could not say for certain how many state residents were on welfare. Although states worked throughout the 1980s to ensure that their various data systems were compatible, managers have by and large failed to combine data from different sources into a coherent whole. State leaders are therefore demanding technologies that will give them ready access to the information needed to make the best policy decisions.

In addition to designing systems that can answer policy makers' questions, says Marchand, information-resource managers and advocates of change must act with near-missionary zeal to correct habits and outlooks ingrained in

the bureaucracy. "You've got to continually sell the vision to get people to think horizontally rather than vertically," declares Marchand. "Within agencies, information managers have to sell to the program managers and administrators and help them develop confidence in the process." An agency official expresses a similar goal: "I want to expand the horizons of those above me as mine have been expanded."

Finally, the next decade will see the states attempt to dovetail their information resources with those of their counties and municipalities. Although the Syracuse University report does not address this matter in local governments, Marchand is currently planning a study of information-resource management at the county level.

Clearly, state and local governments stand to reap many benefits from coordinating their information and resources. But pitfalls lurk as well. Local efforts to join state voice networks or to buy computers through state purchasing systems, for example, might encounter protests from the local telephone company or from the local government's traditional supplier of hardware. "There's lots of money involved," says Marchand, "and that always raises political questions." Still, the task of including municipalities in the information-management process seems more or less inevitable. "Integrating the local service-delivery arm is the next step," according to Caudle, "and states are going to have to deal with it." □

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**"Information is valuable property,
and that creates a set of issues
that will be with us
for a long time."**

James Ettema



James Ettema is one of the developers of Northwestern University's Innovative Telecommunications Science, Management and Policy master's program. He was involved in the FirstHand videotex project and his research includes a project sponsored by the National Science Foundation on business and consumer applications of electronic publishing

I was very interested in the list of acronyms that Commissioner Guess had. I teach a class at Northwestern and on the first day I give them a list of 25 acronyms. It is called the test of "Information Age IQ," although it has really very little to do with IQ. But it does tap the exposure that students have to the technical infrastructure of modern communication. There are two they always know. They always know VCR and they always know PC. But they don't know things like RBOC (Regional Bell Operating Company) among a long list including some of those we've just seen. So that's a little game I like to play with them, suggesting that in the last few years a lot of things have changed, dramatically.

Another game that I like to play with them is called, "When Did The Revolution Start?" They have this sense that it's been the last ten years that has made sense of the notion that what's going on is an information revolution. But the game I like to play with them makes them consider some alternatives and maybe that's an instructive game to play here for just a couple of minutes.

Consider the 1960s. What was interesting about the '60s? Well, that's often the time which those who study the business of telecommunications point to as the period in which "the grids" started to converge. Telecommunications became a part of computing and vice versa and then all of that started to come together with the broadcast grid. So this convergence that people have made reference to here really goes back 20-30 years. Another reason for picking the 1960s as the beginning of the Information Age, if you will, is that it was early in the '60s that the number of workers involved in information work surpassed the number of workers involved in manufacturing jobs. That was very early in the '60s, nearly 30 years ago now.

But then, of course, why don't we consider the 1940s. The '40s are interesting because that is when electronic computing got off the ground. Why? Well, the story is well known. World War II created the need for a couple of different kinds of things. One was encryption—secret codes. Another was ballistics tables. Early work on computers was devoted to very practical problems of wartime America and England. After the war, of course, the foundation for modern consumer society was laid down. Mass media became the social forces at that point that they

are today.

Or how about the 1920s with the emergence of broadcasting as a mass medium? A date that my students never guess in this game is what is interesting about 1927? They think about radio. They think about early regulation of broadcasting. Well, that is when television was first publicly demonstrated. Do you know who did it? AT&T demonstrated television in 1927.

Or how about the 1900s and the origin of wireless communication? It's an interesting kind of situation if you want to understand where technology comes from. Like computers in the '40s, a force behind the development of that system was another technology: the dreadnaught battleship. The dreadnaught battleships regularly sailed far enough apart from each other so semaphors wouldn't work. So that I think offers an interesting insight into the interrelationships between technologies.

But in our game I will push the students back to the 1870s and 1880s. That's a well-known period, of course. It is 1876 that we typically say the telephone was invented by Alexander Graham Bell. There were other telephones and other inventors at that time. Thomas Edison had a telephone at about that time. But we've over the years decided we will give Bell the credit and he was successful in getting a business off the ground. An interesting question there is, what took the telephone so long?

One of the reasons that it took so long is because telegraphy was so good. The telegraph system was a very extensive system. There were telegraphic fire alarms, stock tickers, and so forth. When investors heard this scheme about voice communication they said, "Wait a minute, is it true this is not going to create a paper record? You mean people are going to have to write down the message? That is not an advance over the telegraph." There were printing

telegraphs that created a paper record, not in the dots and dashes we think of but in written English.

When we play this game I ask the students to think about Gutenberg and the printing press and even the Phoenicians working out the alphabet but those are other revolutions. Those are not our revolution. But even so, even if we focus on electronic communication, we have a wide range of choices here to think about in terms of the beginning of the Information Age.

Another approach to this is to think about things in terms of, not so much a longer context, but a larger context, if you will. So let me tell you a little bit different story here. It is one that I am borrowing from a historian, Jim Beniger, who has written a book that some of you might be interested in called "The Control Revolution." It is a history of the information society but he begins it with two devices that seem to have nothing to do with communication. One is the float valve, a device that can turn pumps off and on. The other is a fan tail. You know what a fan tail is? It's not a part of a ship, at least not the fan tail I'm thinking of. My students wouldn't have the faintest notion what this is. I suspect that in this state people are a little more likely to know. The fan tail is the device on a windmill that turns it into the wind.

Why would we begin the history of the information revolution there? Beniger's point is that those are two control devices. His story is the control revolution and his point is that the control revolution is the revolution we are really talking about here. The control revolution includes not only the information revolution, but the industrial revolution as well. And so what he argues about information technology is that it is part of the overall system of manufacturing and transportation. It's the way we control everything else. It is part of that larger system. So his story about computers fits very naturally into a history that focuses on how we use electronic technologies and earlier technologies to control transportation, manufacturing and so forth.

The point I want to draw from this is that when we tell these stories, talk about the information revolution or the control revolution, we typically focus on the technologies and we focus on a particular application of the technologies. And the application is one that's devoted to productivity, devoted to the workplace, devoted to making things and moving things. I think that's important, but the main thing I want to do here is talk about another story, a somewhat different story although a related story. I don't really want to talk too much about hardware anymore. We have seen some wonderful things about hardware, but I am the person Larry asked to come and talk about other kinds of issues because he knows I don't particularly like the hardware. The hardware always seems to cost more than they said it would. It always seems to take longer and it never seems to do everything they said it would do. So I am not a big fan of hardware although certainly I'm not a Luddite. I recognize its importance and some of the things we've seen here I think are fascinating.

There is a story I like that pokes fun at hardware enthusiasts. It is a situation in which people from various disciplines are sitting around talking about the greatest device now available to mankind. Of course, the computer scientists and electrical engineers are quick to jump on the

computer and say, "Now there's an amazing technology, that must be the greatest of all technologies." But those in health care will have other nominations. They might say that something as simple as the scalpel is really amazing or how about the hypodermic needle along with germ theory that accounted for a revolution in health care. So there are all sorts of nominations, the rocket engine, the internal combustion engine, all sorts of things like that.

From the back of the room comes a little voice that says, "I think the greatest invention is the vacuum bottle, not the vacuum tube but the vacuum bottle — the Thermos bottle." "People turn around and say, "The Thermos bottle, what are you talking about?" The voice at the back of the room says, "Well, think about it. It keeps hot things hot, cold things cold. My question is, how does it know?" A little skepticism is in order here.

What I want to talk about is another story that has to do with technology. I don't want to be too cynical and sarcastic here but I am going to tell another story and I want to start at a point where Anthony Smith started. I want to go back to Plato for just a minute — I am sorry but I am a college professor, I just have to do these things.

Those of you who remember Plato may remember him from reading "The Republic" which is a foundational document in western culture. I just want to make one little point about it and that is the size of this imagined republic. Does anybody remember how big Plato thought the republic ought to be? The number of citizens isn't particularly important, but why he limited it is. He limited the republic to a size that could assemble and be heard, could hear each other and could hear an orator. His community was limited by the means of communication available to it. He saw public communication to be absolutely essential to community and to democracy. He limited the community because there was no means of communication other than the sound of the human voice

Let's fast forward here, as they say. Let me talk for just a minute about Ben Franklin because one of the things that I want to do is tell an American story for the most part. Tony Smith told a story about western civilization and what I want to add is an American twist. So let's go to a quintessential American, Ben Franklin, who in 1749 wrote out a curriculum for the Pennsylvania Academy. In 1749 a new society is being built in this country. Here's Ben Franklin designing the academy for that society and he's thinking, "I have to be concerned about the means of communication." He said that there are two communication arts that ought to be taught in the Pennsylvania Academy. One is political oratory, public speaking. To this day my department at Northwestern University still teaches the kinds of things that, not just Ben Franklin, but Plato and Aristotle knew about public speaking. There is a skill that hasn't changed very much or the changes have probably not been for the better in the era of the 30 second sound bite.

The other thing Ben Franklin was interested in teaching the students of the Pennsylvania Academy was the art and the craft of newspaper publishing, because he saw already in 1749 that it was through the mass medium of newspapers that much political communication occurred. The spoken word was important but more and more in this new country that was beginning to spread up and down the

eastern seaboard newspapers were the means of mass communication.

Let us jump ahead another century to the 1830s. One of the most insightful observers in American history was the Frenchman Alexis de Tocqueville. Let me read you a quote from Alexis de Tocqueville that suggests Ben Franklin knew what he was talking about:

"The leading citizens living in aristocratic countries can see each other from afar and if they want to unite their forces they can go to meet one another bringing a crowd in their train. But in democratic countries it often happens that a great many men who both want to and need to get together cannot do so, for all being very small and lost in a crowd, they do not see one another at all. They do not know where to find one another. Then a newspaper gives publicity to the feeling or idea that occurred to them all simultaneously but separately. The newspaper brought them together and continues to be a necessary force to hold them together."

That's an insight we still study in academia — the notion of mass communication as the force for social integration, bringing like minded people together, helping them organize, helping them create social action and to achieve public participation. That is really what I want to talk about here: the means of communication as a story, not so much about productivity, but about public participation.

Let me continue to tell my American story. At mid-19th century, the American project is one of expansion, expansion geographically of course, but expansion into other sorts of unknown regions. An age of scientific exploration. Already in the 1850s historians are writing the history of the means of modern communication. In the 1850s they have the telegraph and that's about it, right? No, they saw themselves as the culmination of the long history of amazing progress.

Let me give one example of writing from this period. It's by an historian and a booster of telegraphy named T. P. Shaffner, writing in 1854. Here's how he ended his history of communication going back to the alphabet. He ends it, of course, with the most modern technology he knows of and that's the telegraph:

"But what is all this to the subjugation of the lightnings, the mythological voice of Jehovah, the fearful omnipotence of the clouds, causing them in the fine agony of chained submission to do the offices of a common messenger."

The social role of telegraphy was clear to Shaffner. He went on to say, "The telegraph binds together by a vital cord all the nations of the earth. It's impossible that old prejudices and hostilities should longer exist while such an instrument has been created for an exchange of thought between all the nations of the earth."

Think about the rhetoric here. It's a rhetoric we still hear very regularly. The notion of the subjugation of the lightnings, the mythological voice of Jehovah always reminds me of the rhetoric of the 1950s about nuclear technology. The famous quote from one of the physicists there at the detonation of the first atomic bomb that summons up the Hindu god Shiva: "I am become death, shatterer of worlds." Here Shaffner tells us telegraphy is "the mythological voice of Jehovah, the fearful omnipotence

of the clouds."

Let's move next to American project at the turn of the century. Now the American project is devoted to issues of urbanization, to coming to terms with industrialization, and great waves of immigration. Where do thinkers look once again for some answers, for some hope? John Dewey, another quintessentially American thinker and founder of American pragmatism along with sociologist Charles Horton Cooley, saw in the means of communication available to them the means to build a new American community. Communication technologies now, of course, include not only telegraphy but the telephone. Film is now available. Newspapers are now a mass circulation medium: the rotary printing press has been around for several decades. A new development at the time though was the mass circulation magazine which opened up the era of modern journalism in certain ways. This was the era of the muckrakers, for example. Journalism became a social and political force in a new way at this time.

So here's Charles Horton Cooley writing in 1909 about these new technologies and what they offered. He finds in them a set of attributes. Listen to his attributes, and see if you recognize this rhetoric. One is "expressiveness, or the range of ideas and feelings these technologies are competent to convey." Another is "permanence of record or the overcoming of time." Another is "swiftness or the overcoming of space." A fourth is "diffusion or access to all classes of men." He says "they make it possible for society to be organized more and more on the higher faculties of man, on intelligence and sympathy rather than on authority, task and routine. They mean freedom, outlook and definite possibilities." That is the rhetoric of computers, but spoken in 1909.

At the turn of the century, thinkers like Cooley and Dewey saw democracy as threatened and looked for the means to restore it. In fact, Dewey's concern was restoring what he called the Great Community. He sensed that something had been lost under the pressures of urbanization, industrialization, immigration and that it could be restored through communication technology, at least in part. It's a powerful vision, a vision that shapes our thinking about our information revolution.

I'll give you a couple of examples here very briefly. One that I want to share with you is from a computer scientist named Harold Sackman, who in 1971 wrote a book that developed the notion of an information utility. It's what we would now call a database, but it also had the capability for electronic plebiscite — an instant poll, if you will. Here's what he said about the notion of an information utility: "Mass information utilities linked to the real time information bases in the public domain could conceivably provide the leading instrumentality for the public to scan the social scene, identify problems, contribute to social control, provide continuing corrective feedback on the interplay of pluralistic social experimentation." This notion of social experimentation he gets from John Dewey who saw the possibility of a society devoted not just to scientific research but to social research focusing on practical social problems. Sackman says we can do it now that we have the computer. The technology is here at last so we can do it.

The information utility idea is an interesting one and with every new technology that comes along somebody

reads the possibility of the information utility into it. Cable television was one in which people said, "There's our channel capacity. Now is our chance to make television into what it *could* be. It will be that educational, informational medium we always knew it could be. Here is our chance."

Let me give you one more example, paying homage to one of our lecturers here and holding him accountable to something he wrote in 1980 in "Goodbye Gutenberg." Anthony Smith wrote, among many interesting things, this: "The interactive electronic mode of knowledge can be likened to an Alexandria without walls." Alexandria is, of course, the library of the ancient world that, for its time, really was the information utility. One of the great tragedies in the history of mankind was that this library was destroyed.

Anthony Smith is talking about an electronic Alexandria, "an Alexandria without walls unified, but universally accessible, emphasizing the sovereignty of mankind over the totality of its knowledge." Again, the visions of accessibility and control — control for important social purposes — is very much alive in our own time.

My point here is to balance the vision of technology as hardware in the service of productivity with the notion of systems in the service of participation. Think of those as twin values and in some sense they are two sides of the same coin, I think. They are two values from which many other issues and values flow. Productivity is the one that dominates public discussion these days. High definition television, HDTV, is seen to be an issue primarily of saving the American computer industry, at least from one point of view.

Intellectual property is an issue that flows from the concern for productivity. Information is property. It's valuable property and that creates a set of issues that I think will be with us for a long time. We've seen a change of copyright law fairly recently. I think we've seen only the beginning of those kinds of issues.

One of the many issues that flows from a concern about participation is the issue of privatization of information. The selling of information that used to be public property and the increased cost of information that used to cost only a small amount. So privatization, I think, is another issue that will be with us for some time to come.

These are twin issues but often they are in tension. They are not mutually exclusive: they are not contradictory but they often exist in tension. That is what I want to think about for a few minutes, the tension between productivity, or property, and the vision of participation. Knowledge is power after all and so access becomes an important issue. A couple of stories about access—just the proverbial food for thought.

One concerns access to public information or what we might think of as information that *ought* to be public. Not so long ago academics, in particular economists, asked the Federal Reserve Board for the computer algorithm used to monitor the monetary supply. It is what the Federal Reserve Board uses to determine when to put more money into the economy, how to adjust discount rates and those kinds of things. The Federal Reserve Board said, "no,

sorry. That computer program is not a public document, not a public record. It is an internal decision making device. It's part of our deliberative process. It is not a public record so the Freedom of Information Act doesn't cover a thing like that." I haven't heard if that one has been resolved yet. If not, it is in the courts and maybe we'll have a resolution soon. The question is then, "What are records?" What ought we to have access to? It's really been made more complicated by computing technology.

Another story, a related story from the private sector:

Several months ago Dunn & Bradstreet, which vends several very large database services, tried to cut off certain users. Those users included the organizational libraries in labor unions and also some other libraries. They said, "The information is less valuable to our primary customers if organizations like

labor unions have it. So what we need to do is to respect the wishes of our most important customers, large corporations, and we need to maintain the value of our product and so we're going to prune away certain undesirable users." You can imagine what hit the you-know-what at this point and they backed off. But I think we haven't heard the last of that sort of issue. The notion of privatization is more than just the notion that this is going to cost us something. Much information is now in the hands of people who can make decisions about access but who have no public accountability mechanisms other than perhaps adverse publicity and of course the mechanisms of the market place.

The third story: Larry mentioned that I had done some work on electronic publishing, serving agribusiness. I looked at several services but one in particular is a very well run operation that viewed as its market the 10-20% of farmers who were the largest farm operators. I went to them as the well-intentioned academic, with good values and all of that. I said, "The largest farmers! Is that fair? What about those other 80-90% of the farmers out there, some of whom are very small? (And of course, this was a number of years ago when the midwest farm economy was in very bad shape.) Is this fair? Is this the right thing to be doing? Can you sleep with yourself doing these sorts of things?"

They said, "You just don't understand our situation." And here is what they told me: "It is true that we're really not interested in small operators; they just can't afford us. But we do think we're doing something about access and equity. In fact, that is what we offer—access and equity. You're just not framing the situation quite right. What we are doing is equalizing power between those farmers that we serve and the grain dealers. It is not the difference within the farm community, it's the difference between farmers and the people they have to deal with elsewhere in agribusiness. After all, it is only the very largest farmers around here who have any use at all for information like barge rates on the Mississippi River or the rainfall on the Steppes of Russia—the kinds of things we're selling and we're selling at a very high cost. The operator with 100-200 acres simply does not need that. What he needs to do is to use his telephone to call the local grain elevator. But

"Knowledge is power
after all and so access
becomes an important issue."

It's when you sell 100,000, two, three, 400,000 bushels of soybeans, corn, whatever, that those barge shipping rates become the kind of thing that you want to know right now and people are willing to spend a few hundred dollars a month to get that kind of thing.'

That gave me an enriched sense of the complexity of the issues that fall from these twin values of productivity and participation. The notion of access is not a simple one. In fact, I think it's maybe worth thinking about the issue of privacy as an issue of access in a certain way. Let me tell you what I mean. By a fairly recent count, the federal government has about 8,000 systems, 8,000 computer systems or record keeping systems, that have data about individuals in them. Eight thousand separate systems! According to this estimate, every individual in this country has his or her name in about 15 systems on the average. So you think, "Ok, I'm in Social Security. I have a military record. Maybe a police record." But you are in an average of 15 government systems.

The thing I'd like to think about here is the notion of privacy as being that horse that is already out of the barn. There is no privacy, there never will be privacy ever again. So what do we need instead? What I think we need to do now is to substitute access for privacy. Privacy is about gone. What we need to know is what others know about us and what is being done with it. Some of you might have received something that I received from TRW. Does the name TRW mean anything to people? You think of it as a company that makes hardware of various kinds. Do you know what else they do? They run a credit check service. They're one of the firms who do your credit rating. I just got something from them in the mail that said, "We'd be happy to sell your credit record to you." They want me to subscribe to a service that does a couple of things. First of all, it gives me access to my credit record whenever I want. I can order it up the same as anyone else, including the smallest retailer. Further, they'll let me know when anyone else orders it. It is a bargain and I'm inclined to do it. The idea is to substitute access for privacy. Privacy is lost to us but access can help a little bit in managing this problem.

The last point I want to make is the notion that when it comes to both productivity and participation, those wonderful possibilities always seem to be just one step away. They are never here, so no matter what wonderful machines are there, somehow those possibilities seem to step back and back and back. Who has a paperless office? Who has been promised a paperless office by about 1990? Everybody, right? The point is that when you look at the promises for productivity there have been some amazing strides but those promises often elude us. In fact, the great investments that we have seen in the last few years in terms of information technology really aren't returning productivity increases anything like the steam engine did in the factory. Not even close. A whole conference can be devoted to problems of implementation of technology.

I don't want to go into that, however, I want to stick to participation and think about how *those* promises always seem to be one step away. In fact, now we are worrying about communication technology as a cause of fragmenta-

tion in this country rather than the restoration of the great American community that John Dewey saw. We worry about people subdividing based on economic status and increasingly on language and on tastes. Fragmentation now is the concern. Where is that community John Dewey foresaw in technology? Or think about Harold Sackman's vision of the information utility bringing government closer to citizens.

I spend much time talking with my students about the media as a means of manipulation of the electorate. With modern polling technology, survey research technologies, direct mail technologies — now there's a powerful communications technology, direct mail technology — along with advertising, you have very powerful means of voter manipulation.

So those are the concerns that we are confronting once again with the technology that we have now and that's available to us. Still, we haven't given up the notion of information technology as a means to enhance productivity and we shouldn't give it up as a means to enhance citizen participation. And so I eagerly clip any good news in this regard that I can find. One story I

clipped lately is that Santa Monica, Calif., is building a local information utility. Those of you who know southern California know that Santa Monica in many ways is a long, long way from East LA, a long way from Watts and when the information utility gets there I will be really interested! But for the time being Santa Monica has a public information system that you can access through your PC. So we'll see what happens. These things always have to start somewhere. Where they start is among the early adopters and we all know who the early adopters are. They're the kind of people who live in the Santa Monicas of the world. Everything has to start somewhere. Maybe this is the start.

A lower tech version of that, not a low-tech version, but a lower tech version is something that we see in Chicago as an important political force. That is the black owned and operated radio stations in Chicago that really do give authentic voice to the black community in a way that the "mainstream," meaning white, newspapers don't do and television, of course, doesn't do.

One more story in this regard: It's a project that Northwestern University has worked on for a number of years. I really wish I could take credit for this but I can't. It was done by the Center for Urban Affairs and Policy Research. For a number of years they ran a project called the Affirmative Neighborhood Information Project. What that did was something conceptually really very simple and in terms of the hardware, really very simple. They did it on the ever popular Apple Computer. What they did was collect from the city of Chicago information that the city itself regularly collects. This would include information like building inspections and health inspections, information about capital expenditures. In other words, where are the streets being repaired? Where are new sewer lines going in? Where are sidewalks being fixed? And, of course, also records from the police department. These existed in many different forms, some in paper, some in computer files and so forth. They were available in many different formats for

"There is no privacy, there never will be privacy again."

many different kinds of machines and many different modes. None of those modes though seemed to be very useful for people who wanted to do anything other than safely store this information away somewhere. Anybody who wanted to use this information was really hindered by its inaccessibility. Here is a hardware problem and an organizational problem.

What this group did was start collecting this information and developing a system to organize it. One of the most useful ways they found to organize it was visually, in maps. So they would create maps about where capital expenditures were going, and anybody who knows anything about Chicago can make a guess that capital expenditures are not evenly distributed across the city. What do you do with that kind of information? Do you sit around waiting for citizens to walk in? Of course not. The tradition of the Center for Urban Affairs and Policy Research is a very activist kind of tradition. The idea is to do something that makes a difference. What are they going to do with it? They are going to make it available to community groups in the city. They are going to tell community groups how to massage the data and what it's for, and what it means. There is an educational component there that operates through these organizations.

Another interesting branch of that project was the crime data and, of course, they worked closely with the police department. The city police department was interested in this information because they could graphically array information of all kinds. They could do things like look at drug arrests in the evening after a major athletic event in the city and see where they happened -- not only space but time was a dimension here. So the police department began using this system to redesign its patrol routes, reassign officers. But given that urban activist tradition

the center staff said, "This can't be in the hands of only the cops. It's got to be in the hands of citizens as well." So the same information goes to the community groups and the community groups take it back to the police department and say, "You know we've been complaining about this intersection and all the accidents there and you've always said there aren't any more accidents here than there are anywhere else. Look at the map. The map says there are. We want the stop light. We want the crossing guard."

The point I want to draw here in summing up the idea of participation is the idea that when we talk about using technology to empower citizens, the notion of empowering citizens one by one is probably not what we should be most concerned about. Certainly we need to make the information accessible to individuals on a one by one basis but typically the notion of empowerment means that we should empower organizations. The idea is that dealing with the information poor is a matter not just of more information but more information in the service of more organization. So think about how to mediate, organize and disseminate information to and through organizations. Mediate it through the traditional mass media. Give it to the newspapers but also give it to the neighborhood council, community organizations, hospitals, community groups of all kinds. You could probably think of lots of applications to your own situations.

I don't want to be too optimistic here. I want to always keep in mind the notion that we've always hoped for a lot from technology and that the history of technology suggests that those hopes are never fully met. They always seem to recede off into the future. But the history of technology also suggests that we must hope, that we have no choice but to hope.

Thank you.



State Representative Kay Brown and Anchorage Attorney John McKay talk during a coffee break

Information Processing

INFORMATION MANAGEMENT

THESE MAPS CAN FIND OIL —OR SELL BURGERS

Powerful 'geosystems' marry digital maps and data bases

A few Texaco geologists still recall the days before 1984, when picking places to drill for oil was 90% grunt work: Complex maps were drawn by hand. Then Texaco installed a new computer called a geosystem, and the sweating stopped. The geosystem makes color maps and lets geologists peel away layer after layer of earth—at their terminals. It also answers questions about land-leasing terms, oil strikes, and rock formations. Texaco Inc. says making the maps now takes 40% less time—and accuracy is up.

Today, lots of companies use computerized mapping. According to Market researcher Dataquest Inc., sales of geosystems rose 50% last year, to \$282 million, and are expected to go as high as \$600 million by 1992. And oil drillers aren't even the best customers.

Those are companies like Arby's Inc., the 2,000-store restaurant chain. It recently installed a geosystem to measure the performance of existing franchises and to pick the best sites for new ones by looking at traffic patterns. It found that one store in Phoenix wasn't as successful as it seemed: Though its volume was high, its market penetration was low. Stepped-up promotions put the outlet on the mend. Now, Arby's also chooses new locations more skillfully, says Hal Reid, vice-president of franchise planning. With a less haphazard approach, "we've reduced our bad decisions dramatically."

DOUBLE PLAY. At the heart of a geosystem are two separate data bases: one containing maps, the other essential information such as demographic breakdowns, market research, or sales figures. The computer combines them to create a more revealing view than either set of data would provide alone.

Let's say a bank wants to pitch a new financial service. Its geosystem could create a map by Zip code area, pinpointing the people within 100 miles who have bank accounts with more than \$1 million. It's possible to draw up such a list without a geosystem. But a computerized map makes it easier for the bank to plan personal approaches to these potential customers through its network of



TEXACO'S CUSTOM \$10 MILLION SYSTEM MAKES EXPLORATION MAPS MORE QUICKLY AND ACCURATELY THAN EVER

branches. "It's a powerful way to thread through information," says KPMG Peat Marwick's Richard G. Silage.

It's a powerful hit to the budget, too. A large-scale, custom-designed geosystem like Texaco's can cost upward of \$10 million. Even a less ambitious system that uses predeveloped maps and canned demographic information costs about \$100,000, though desktop systems now are emerging that cost \$20,000 or less.

The market leader in big geosystems is the Environmental Systems Research Institute in Redlands, Calif., which had sales of \$22 million in 1987. Hot on its heels is Intergraph Corp., a graphics workstation company, with \$17 million in 1987 sales, and IBM, with \$13 million.

Of the three, Intergraph seems most aggressive right now. It recently sold 40 systems to the U.S. Geological Survey, which plans to digitize its library of maps showing every county, town, river, lake, mountain, and highway in the na-

tion. The USGS hopes to make these electronic maps the standard included in geosystems sold commercially. While Intergraph is soaring, IBM's geosystem sales are a bit flat, apparently because it hasn't kept up with graphics and database breakthroughs. Says Jay Leonard, president of Denver geosystem consultants Platte River Associates Inc.: "IBM has a lot of catching up to do."

LOTS OF HELP. So do potential customers, many of whom have little idea what a geosystem can do. They're about to get lots of help from consultants such as EDS, KPMG Peat Marwick, Arthur Andersen, and Price Waterhouse, who plan to cash in as the market develops.

As the use of geosystems spreads, one side effect is a shot in the arm for sellers of data-base-manager software, which controls a geosystem's maps and data bases. Britton Lee, Oracle, and Ser-

vio Logic are the leading contenders to supply geosystem manufacturers—or big corporations that build their own systems from scratch.

One company that built its own is Budget Rent a Car Corp., which uses a data-base manager to power its new Automap geosystem. Budget's Automap for Chicago contains 12 billion street and address combinations that the data-base manager turns into a printed set of directions on how to get there from here. Says Harold Saper, Budget's director of map systems: "Ours is so sophisticated that we will be able to quickly satisfy 99% of the people 99% of the time."

That claim may soon become common. For years, companies have had tons of data they couldn't make sense of, because of limitations in methods for analyzing it. Now, digital mapmaking could be the perfect technology for putting data in its proper place.

By Jeffrey Rothfeder in New York

MANAGING WITH ELECTRONIC MAPS

They can help you sell soft drinks, produce oil, and break up traffic jams. As the systems get cheaper, ever more users are turning to this hot new form of computing. ■ by Gene Bylinsky

IT WAS AN AWFUL MESS," recalls Gene Wirsig, a technical services manager for the western division of Potlatch Corp. The FORTUNE 500 forest products company owns 600,000 acres of timberland in northern Idaho, and ten years ago the keepers of its inventory were spending a mere \$200 annually on data processing. An old Monroe mechanical calculator cranked out columns of figures on a narrow paper tape. Maps of the company's

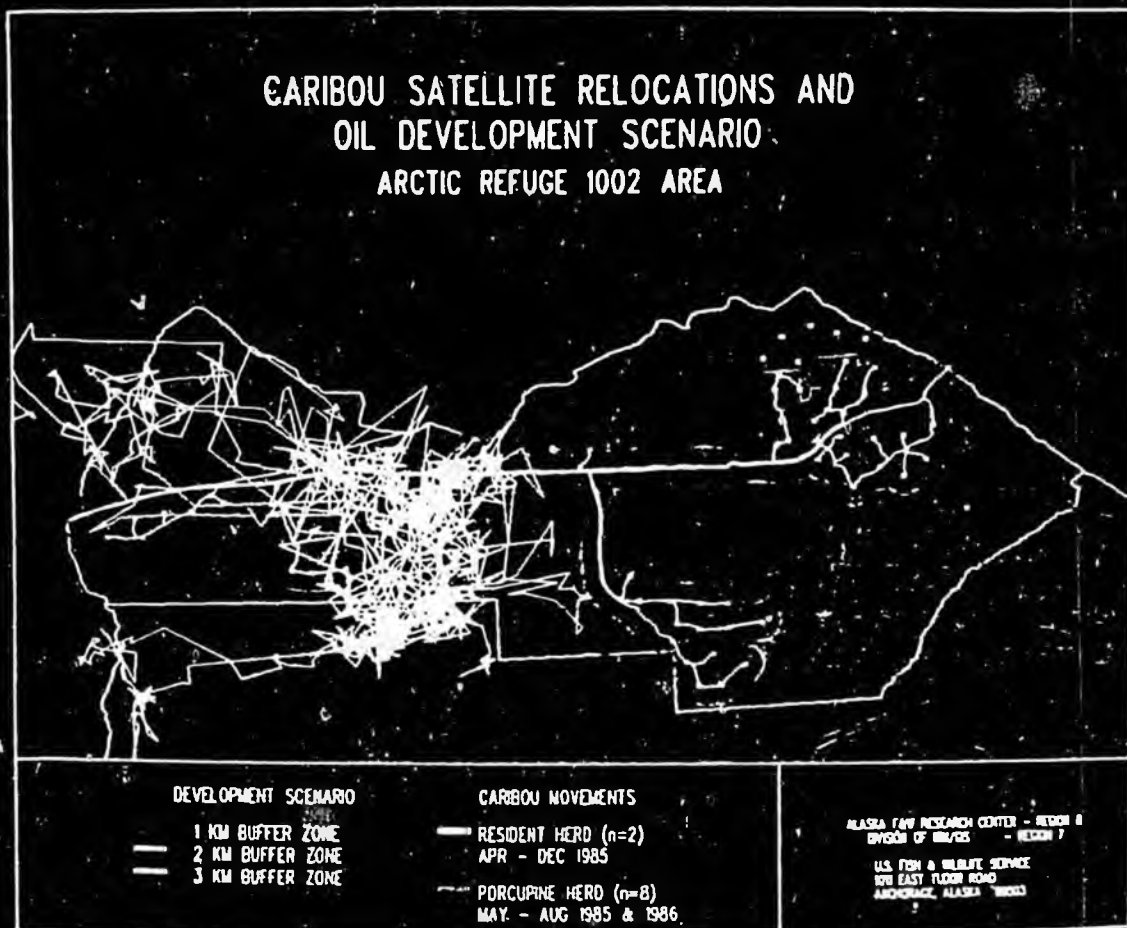
timber stands, scattered among 2.2 million acres of federal, state, and private property, an area bigger than Rhode Island and Delaware combined, were hopelessly out of date—no small matter when cutting trees on someone else's land can cost you triple damages. Information about a single timber stand was stored in hundreds of individual office files, often miles apart. Says Wirsig: "We were trying to address questions about changes in ownership, for example, that

would take months of delving into that antiquated database to answer."

This year Potlatch's inventory group will lay out \$180,000 for data processing—and the company thinks that's a bargain. A new combination of automated mapping and data processing gives Potlatch up-to-the-minute information on the status of 4,900 separate timber stands. A forest manager sitting at a terminal can check land ownership changes in a few minutes by zooming

CRITTERS VS. CRUDE

U.S. Fish and Wildlife Service biologists fitted caribou in Alaska's Arctic National Wildlife Refuge—on the oil-rich North Slope—with transmitters and tracked them by satellite. The image shows how a hypothetical pipeline might affect two herds, one named for the Porcupine River.



in on a map of a particular site. "We can now find exactly what we're looking for," says Wirsig. "This is really a quantum leap in data management." The company has combined digitized maps of its properties with computerized data on the type and age of trees, soil quality, access roads, ruggedness of terrain, ownership of abutting land, and market prices of different kinds of finished lumber. The data can be updated continually, and other variables are automatically adjusted in turn.

Potlatch has spent about \$650,000 on hardware and software since it began putting in its new system three years ago. Wirsig and his colleagues figure that they have far exceeded the 27% annual return on investment they had promised their bosses. While they can't put exact dollar figures on their savings, they know they are substantial. Two administrative jobs have been eliminated, for example. The division has become a finely tuned mechanism that manages the timber inventory much more efficiently than it used to and responds far faster to sudden challenges from competitors or other changes in market conditions.

WHAT POTLATCH has adopted—a geographic information system, or GIS for short—makes possible storing dozens of different kinds of data and viewing all or some of them at will in a clear, integrated display. It's one of the fastest-growing branches of computing, with ever-widening uses that range from identifying crime patterns to planning marketing strategies to plotting wildlife tracks in areas where natural resources may be developed. GIS technology is spreading because, for one thing, it's becoming a lot less expensive. It may still cost as much as \$200,000 for the hardware and software necessary to get a medium-size GIS system going on a mini-computer or a mainframe. But ComGrafix Inc., a small company in Clearwater, Florida, has just begun offering software for as little as \$8,500 that runs on a \$2,000 Macintosh. IBM has given GIS its blessing and sells a \$2,500 software package for its PCs.

Until recently the only way to keep track visually of lots of different kinds of data about a geographical area had been to use a basic map and a series of overlays, each presenting a specific type of information—fire station sites, for example, or pollution sources, or neighborhood variations in

REPORTER ASSOCIATE *Alicia Hills Moore*

COMPUTERIZED GEOGRAPHY



tasks computerized geography can perform and its many uses as a management tool.

As with many other computer applications, data gathering begins undramatically in the field where foresters like Paul Gravelle (above) measure the height and girth of trees, which Potlatch calls its "factories." The data are passed on to specialists like Stephen H. Smith (facing page).

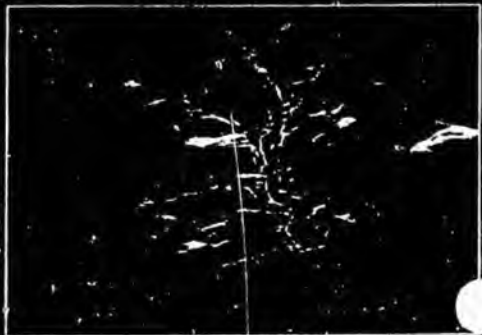
Smith can generate a needed image on his computer screen and print out a computer-generated map that shows the up-to-the-moment status of Potlatch's individual timber stands. He can figure out which end products the logs should be turned into for maximum profit. He can retrieve information on the height and diameter of ten species of trees—the company's living inventory—and in effect grow the trees inside the computer, projecting the development of the stand at any point before it is to be harvested, 60 to 80 years hence. He can quickly decide whether it makes sense to buy multimillion-dollar logging equipment that cuts trees only up to a certain diameter and only on level ground.

To make such timely data displays possible, Potlatch foresters compile and frequently update information on as many as 300 variables that describe each of the company's 3,900 timber stands covering 600,000 acres in northern Idaho. The geographical information system allows Potlatch to generate a "living" map of its timberlands. As Smith says, "It's like pulling out a timber stand with a string and looking at it. And we can simulate thinning or fertilizing effects that may occur over the life of the stands."

In addition, computerized geography allows Potlatch to create a three-dimensional view of the surface of any area (below, at right) and combine different types of data into a multilayered overview of its timberlands. The series of images running diagonally from lower left to upper right on the facing page can be combined to make the kind of a composite view of a piece of terrain that can prove equally valuable in planning the development of a city, keeping track of oil and gas leases, or speeding a fire engine to a burning building by the shortest possible route.

All the available information is readily accessible to the resource staff at Potlatch via a shared electronic file, and the process takes seconds rather than the weeks or even months it required before computerization.

As Potlatch executive Gene Wirsig puts it, "What used to be a paper chase is now a unified database."



Who owns which land doesn't show up on an aerial photo of Idaho's Dvorshak reservoir area (left), but a three-dimensional electronic map identifies Potlatch property clearly.

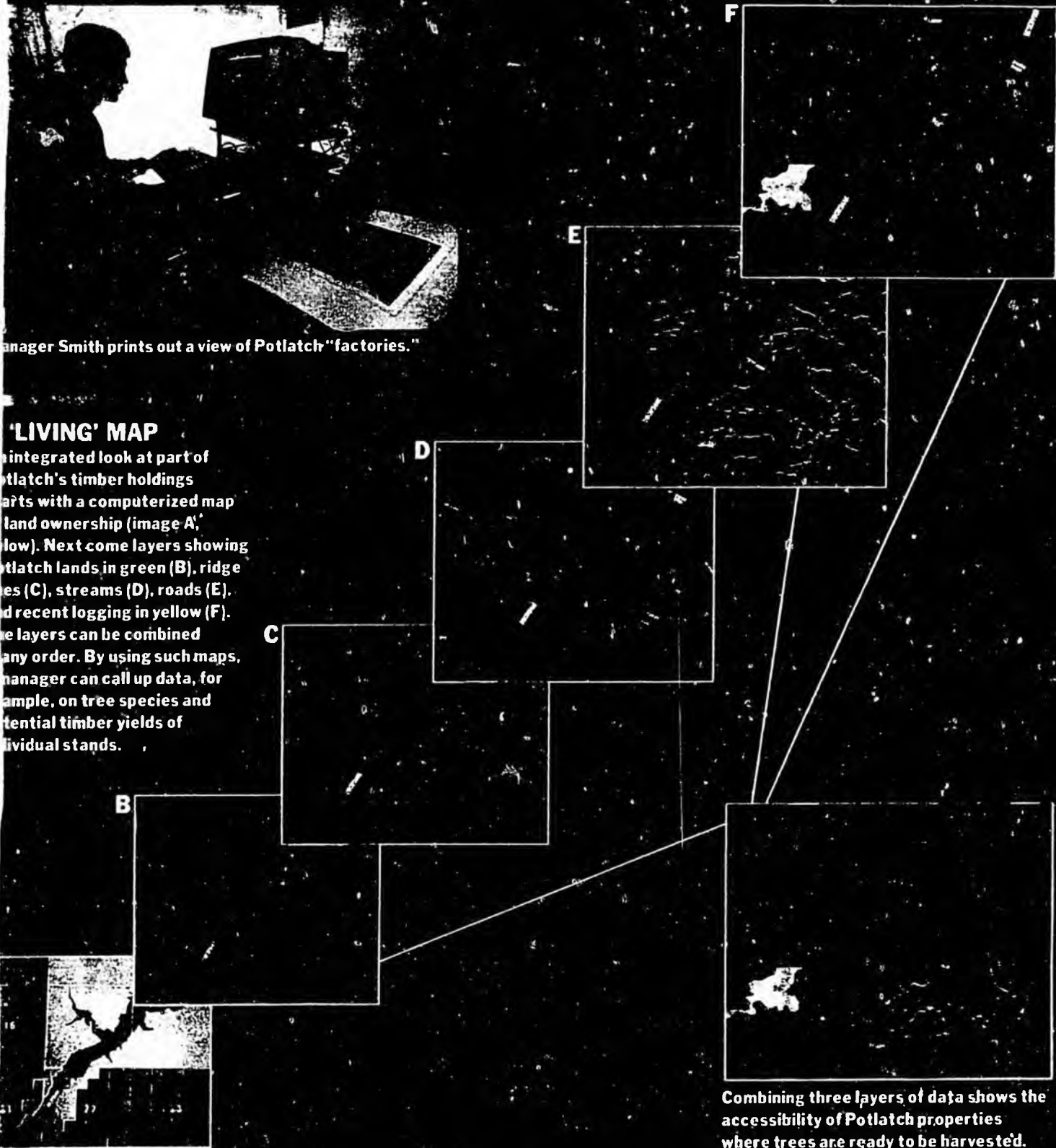
BOOSTS PROFITS AT POTLATCH



Manager Smith prints out a view of Potlatch "factories."

'LIVING' MAP

An integrated look at part of Potlatch's timber holdings starts with a computerized map of land ownership (image A, below). Next come layers showing Potlatch lands in green (B), ridges (C), streams (D), roads (E), and recent logging in yellow (F). The layers can be combined in any order. By using such maps, a manager can call up data, for example, on tree species and potential timber yields of individual stands.



Combining three layers of data shows the accessibility of Potlatch properties where trees are ready to be harvested.

TECHNOLOGY

household income. The idea of recording different layers of data on a single map dates back at least to the Revolutionary War, when a French cartographer prepared hinged overlays for General Washington showing troop movements at the battle of Yorktown. In 1855 a map of a cholera epidemic in London helped solve a public health crisis by pinpointing a contaminated well as the cause of the outbreak. When more than two or three overlays are combined, however, maps quickly get confusing. Computers have changed all that.

IN A SENSE, geographic information systems are the geographical equivalent of a computerized spreadsheet. What users of Lotus 1-2-3 are accustomed to doing with financial data, GIS makes possible with maps as well. Says Lisa Thorell, an analyst at the Dataquest market research firm, who has a Ph.D. in visual sciences: "Eighty percent of the input pathways in the nervous system are devoted to bringing visual information to the brain. The more information you can absorb visually, the quicker you can come to a decision. Everyone can read a map. It doesn't look abstract, and it's much more appealing than looking at tables of figures."

By marrying computerized data with automated mapmaking, the pioneers in this field have created a remarkably versatile new tool to help manage corporations, cit-



Pioneers Jack and Laura Dangermond run the Environmental Systems Research Institute (ESRI) of Redlands, California, the largest supplier of geographic information systems.

ies, wildlife refuges, military bases, and a variety of other operations with a precision unattainable before. GIS software similar to Potlatch's is being used, for example, by Ducks Unlimited, a conservation group that hopes to reverse a decline in some migratory bird species by combining satellite images with other computerized geographical data to pinpoint man's encroachment on marshland. "We're getting a handle on the habitat," says Barbara Vogel, a Ducks Unlimited computer cartographer.

In cities and towns from Tacoma to East

Greenwich, Rhode Island, planners, police and fire officials, road builders, and others are using GIS programs. Their tasks vary from keeping property ownership up to date for tax purposes to unifying maps used by different government departments so as to avoid tearing up freshly paved streets to repair utility lines.

Commercial uses of GIS are even more wide-ranging. Examples:

■ Oil companies such as Shell and Amoco are putting it to work processing ever-changing lease maps, making three-dimen-

HOW COMPUTERIZED GEOGRAPHY COULD HELP SAVE EARTHQUAKE VICTIMS

To learn how an earthquake would delay rescue vehicles from fire stations (marked F) on the edge of Salt Lake City, researchers superimposed a map showing normal response times on one illustrating likely damage from the quake. The blue areas can be reached in under 2.5 minutes, while streets shown in white would be a full ten minutes or more from help.



Normal response times



Where the faults are (red lines)



Response times after a quake

TECHNOLOGY

sional geological models, and finding optimum locations for gas stations in developing areas.

■ Pennsylvania Power & Light is creating new meter maps and helping prospective business customers find suitable building sites.

■ Coca-Cola, Frito-Lay, UPS, and Federal Express use GIS to direct their trucks along the fastest possible routes.

■ Yellow Cab of Tampa, Florida, enters the addresses of customers who telephone for a taxi and then transmits a code to its drivers, to avoid interception of fares by competitors.

■ The feed division of Hubbard Milling in Mankato, Minnesota, employs GIS to estimate the amount of feed the company can sell in a 12-state area, based on animal populations and average consumption of each species by county.

Thorell of Dataquest puts last year's worldwide GIS hardware and software volume at \$282 million, about half of it in the U.S. She sees the market reaching \$590 million by 1992. The growth rate could rise to 35% a year, she predicts, if the use of IBM and Apple personal computers for GIS accelerates as expected.

POWERING the most sophisticated GIS applications more often than not is software supplied by a small, fast-growing, privately held company called Environmental Systems Research Institute (ESRI) of Redlands, California. IBM has just begun to resell ESRI's programs for use not only on its PCs but on its workstations and mainframes as well. The software also runs on computers and workstations made by many other companies, including Apollo, Sun Microsystems, Data General, Digital Equipment, Hewlett-Packard, and Prime Computer.

Widely viewed as the father of commercial GIS, Jack Dangermond, 43, ESRI's founder and president, is a Harvard-trained environmentalist who founded the company with his wife, Laura, 20 years ago using \$1,100 in savings. ESRI has developed what is generally conceded to be the most advanced GIS program, Arc/Info, which takes its name from a mathematical term and "information." The software makes it possible to combine and manipulate geographical data from maps and numerical information about demographics or almost anything else that's pertinent. The company turned a profit from the start and now employs 350 people around the world.



Normal travel times



Travel during evening rush hour

BEATING THE RUSH

Getting there may become less painful thanks to computerized geography. To show precisely how much travel time by automobile increases from downtown Burbank during the evening rush hour, a computer programmer fed into the system data on important variables like block lengths, traffic light timing, and traffic density. Starting from the city center, he then simulated traffic flow and speed. Each colored band represents 30 seconds of travel time. Engineers could use the data to calculate the effect of bottleneck-easing measures like changing traffic light cycles to speed outbound traffic and turning some arteries into one-way streets during peak periods.

Sales reached \$40 million in 1988, nearly double the year before.

Among other suppliers of GIS systems are such smaller companies, also privately held, as GeoVision of Ottawa, Erdas Inc. of Atlanta, and Geographic Data Technology Inc. of Lyme, New Hampshire, whose products include software to integrate electoral and census information with map-making. It hopes to cash in on the nationwide redrawing of congressional and state legislative district lines that will follow the 1990 census.

Catching up with Jack Dangermond's ESRI has become a principal preoccupation of competitors, which include Intergraph Corp. of Huntsville, Alabama, and Synercom Technology Inc. of Houston, both public companies. ESRI's rivals began as computer-aided design (CAD) or automated-mapping companies, which use computers to augment or even replace the painstaking hand work of cartography. Intergraph, already a relatively large and booming company (1988 sales: \$800 million), seems particularly eager to strike it big in GIS. Like ESRI, Intergraph was started by entrepreneurs 20 years ago. Among the principal founders, who began the company with \$60,000, were James Meadlock, 55, and his wife, Nancy, now an executive vice president.

There the similarities between the two companies—and the two men—end. Kindly and eloquent, Dangermond runs ESRI with unusual concern for his employees. Professionals can set their hours and work at home if they want. Dangermond hopes that eventually GIS will help save the world from environmental destruction. Says he: "Sometimes I have these fantasies of giant rototillers going across the landscape digging huge surface mines, the tropical jungle being obliterated, all the timber being cut in Nepal. How can we begin to get a handle on this problem as planners, analysts, rational people?"

DANGERMOND IS PROUD that the United Nations Environmental Program has used ESRI software to study the decline in the number of African elephants. The study concluded that unless poaching and encroachment on their terrain are soon stopped, the big beasts will become extinct by the year 2000. He adds that "at the other end of the scale, if some guy in a small city is able to make a better decision about where to locate a fire station, or the people

at Exxon are able to discover oil with less unpredictability—when you see that kind of application, it really gets you excited. I love business. I love to make things work.”

Blunt-talking Jim Meadlock is unlikely to have nightmares about rototillers roaming the world. He used giant bulldozers to level part of Intergraph's 400-acre campus on the outskirts of Huntsville. Twenty years ago, working for IBM, Meadlock was in charge of software development for the Apollo moon mission at the Marshall Space Flight Center in Huntsville. Now, in the shadow of that center, he has constructed 23 sprawling buildings, where 5,000 people

work. His tightly organized company, with 7,000 employees worldwide, has a hammerlock on providing automated-mapping equipment for military agencies in the U.S. and abroad.

AUTOMATED MAPMAKING is the first step in GIS. Atlas publishers and mapmakers like Hammond and Rand McNally are switching over to the new, computerized approach. First, just as all GIS users do, they must go through the painstaking and often costly process of digitizing existing maps, assigning coordinates to streets,

buildings, rivers, and other features so the information can be stored in a computer. Some already digitized geographical data can also be bought from federal agencies, principally the U.S. Geological Survey, and from private companies like Etak Inc., of Menlo Park, California. Etak is the pioneering producer of navigational maps for automobiles and trucks that move as the vehicle does, displaying streets and intersections coming up; it has licensed its map displays to General Motors, as well as to European and Japanese companies, and expects GM's luxury cars to be equipped with its moving maps in about two years. Mapmakers also

A NEW KIND OF SELECTIVE MARKETING

How does the optimum merchandise mix vary for department stores in different parts of the country? How should you pitch your promotions to middle-income customers? To the affluent? Marketing questions like those can now be answered at the click of a computer "mouse" button with software introduced a few months ago by Tactics International Ltd. of Andover, Massachusetts. A user—a department store chain, for example—can determine in seconds the most salable selection of stock for its farflung stores. On the map at right, hardware turned out to be big in Tennessee, while sporting goods were tops with Arizonans. In Chicago another customer produced an income distribution map to help find the best site for an upscale store. Still another, a packaged goods company, used income, family size, and other demographic data in the system to determine what kind of soft-drink promotion—a 12-cent coupon, a trial size, or a special price—would be most effective at each of ten stores around the city.



Who buys what goods where



Red means rich in Chicago.

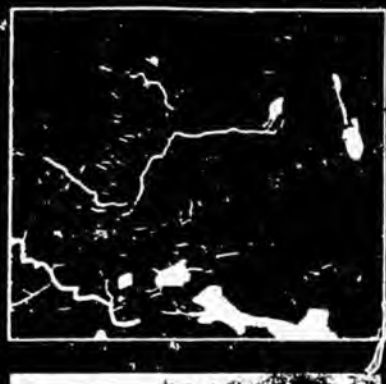


Which promotion is best

TECHNOLOGY

get up-to-date information from aerial and satellite imagery. The French SPOT satellite pictures, finer in resolution than those provided by the U.S. Landsat, are catching on with GIS users particularly fast.

ONCE THE COSTLY, time-consuming, and occasionally error-prone digitizing is done, it's relatively easy to keep maps current. An Erdas system used in conjunction with Arc/Info typically allows a user to superimpose on a satellite image a digitized map of the same area. An operator can then update the map simply by entering the features of, say, a new subdivision that occupies a once-empty space onto the digitized map with a cursor pen. An updated new map can then be printed out on the spot. To keep the database up to date at Potlatch, foresters gather information on each timber stand and pass it on to the GIS operators. The foresters will soon be equipped with hand-held data acquisition devices much like those used to keep track of inventory in grocery stores. Says Stephen H. Smith, inventory systems manager: "Our stands are changing every day. Harvesting is going on all the time. We're always planting trees and building new roads."



MANAGING THE LAND

To advise the World Bank and other lenders, the U.N.'s Food and Agricultural Organization produced a computerized atlas of Africa. In this region of Tanzania the white areas are most suitable for irrigation, followed by those in red, blue, and dark green. The ocean appears in olive green.

For larger users it still takes knowledgeable and well-trained personnel to install and operate a GIS system. But inexpensive, simplified versions are beginning to appear. In Tacoma detectives and firemen run them. The city began in 1975 by entering the coordinates of 80,000 land parcels and

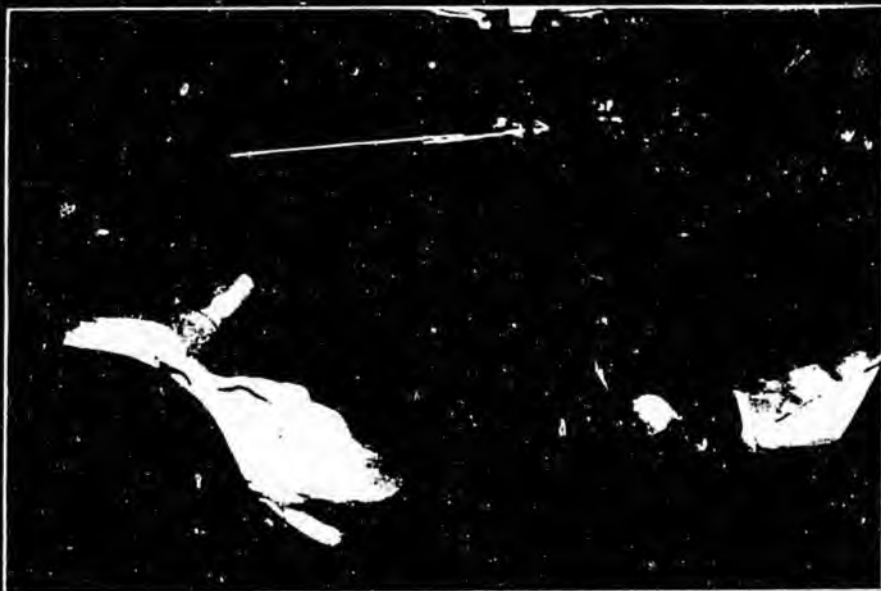
streets into its GIS database. City officials are delighted with their new ability to keep instant track of changes in property assessments, which improves their estimates of future tax revenues. The police department charts burglaries and other crimes; it can spot developing patterns quicker than it used to. Tacoma firefighters are cutting response time by shifting the deployment of equipment. The municipally owned water company plans to optimize meter-reading routes and make it easier to locate electric meters and also to find water shut-off valves in emergencies. Savings could easily amount to hundreds of thousands of dollars a year. What pleases Donna Wendt, a systems analyst who works with Tacoma's GIS, is that key users in many city departments are profiting from the system. Says Wendt: "We're accomplishing more work and turning out better map products."

More and more corporations are discovering GIS. ESRI already counts more than 20 FORTUNE 500 companies among its Arc/Info users, and Dangermond foresees a major expansion in the corporate world this year. Along with software that runs on Macintosh and IBM personal computers, the emergence of faster, less expensive workstations equipped with better graphics and more capacious memory is speeding the spread of GIS. Optical disks in particular now allow storage of massive amounts of geographical and digital data. DeLorme Mapping Co. of Freeport, Maine, sells a world atlas on an optical disk. Selected areas can be called up on a computer screen, and the viewer can zoom in on specific locales with a resolution of three feet, making an object the size of an automobile easily discernible on the screen.

SOON COMPANIES may simulate responses to challenges from competitors, expanding the systems' usefulness by combining databases that contain ever more detailed commercial data with all the sophisticated geographical resources of GIS. "It's an exciting idea," says Thorell of Dataquest. "In a future corporate war room you would have a huge flat panel display hooked up to a very fast computer capable of displaying customer, competitive, and other information." Could a competitor make a lower bid, for example, because his materials storage sites are more strategically located? Geography has come a long way since you memorized the state capitals for Miss McGonagle in the fifth grade. **F**

ALBUQUERQUE'S FAST NEW AMBULANCE SERVICE

Guided by a computerized city map displayed near the dashboard, driver-technician Jim Nelson and paramedic Bill Ziegler of the Albuquerque Ambulance Service answer a call. Most response times have been cut by two minutes.





Informing the Nation: Federal Information Dissemination in an Electronic Age

The government today stands at a major crossroads with respect to the future of Federal information dissemination. Technical advances are creating opportunities for productivity improvement in Federal information dissemination that OTA estimates, conservatively, at hundreds of millions of dollars per year. Technological advances have opened up many new and potentially cost-effective ways to disseminate Federal information, especially those types of information (such as bibliographic, reference, statistical, and scientific and technical) that are particularly well-suited to electronic formats. For example, an entire year's worth of the *Congressional Record* or *Federal Register*, or several Bureau of the Census statistical series on employment and demographic trends, can be placed on one compact disk that can be easily read with a low-cost reader and basic microcomputer. Press releases, weather and crop bulletins, and economic or trade indices can be disseminated immediately via electronic bulletin boards or online information systems.

OTA expects important underlying technical advances in microcomputers, printers, scanners, electronic publishing systems, optical disks, and a host of online networks to continue unabated for at least the next 3 to 5 years and 10 years or more in many cases.

On the demand side, OTA's 3- to 5-year outlook indicates that overall demand for Federal information in paper formats will decline modestly and the demand for microfiche will drop rather markedly (except for document storage and archival purposes), while the demand for electronic formats will continue to increase dramatically. The results of surveys conducted by the General Accounting Office indicate, for example, that civilian agencies disseminated electronically over 7,500 information products in fiscal year 1987, which is more than triple that of 4 years earlier.

Information is the lifeblood of many Federal Government programs and activities and is essential to the implementation of agency missions and to informed public debate. The advent of electronic dissemination has generated serious conflicts over how to maintain and strengthen public access to government information and balance the roles of the Federal Government and the private sector. Congress has enacted numer-

ous laws that emphasize the importance of broad public access to Federal information and assign various information dissemination functions to individual Federal agencies and governmentwide clearinghouses. But the existing statutory and institutional framework was established by Congress largely during the pre-electronic era, and technological advances are creating a number of problems and challenges.

- At a fundamental level, electronic technology is changing or even eliminating many distinctions between reports, publications, databases, records, and the like, in ways not anticipated by existing statutes and policies. A rapidly growing percentage of Federal information exists in an electronic form on a computerized system as part of a "seamless web" of information activities.
- Electronic technology is eroding the institutional roles of governmentwide information dissemination agencies. While many individual Federal agencies disseminate at least some of their information in electronic formats, the central governmentwide dissemination mechanisms (primarily the Superintendent of Documents sales program at the U.S. Government Printing Office, Depository Library Program administered by GPO, and National Technical Information Service) are presently limited largely to paper or paper and microfiche formats and thus disseminate a declining portion of Federal information.
- Technology has outpaced the major governmentwide statutes that apply to Federal information dissemination. The Printing Act of 1895, Depository Library Act of 1962, and Freedom of Information Act of 1966 predate the era of electronic dissemination. The Paperwork Reduction Act of 1980 was amended in 1986 to include information dissemination within its scope, but substantive statutory guidance on electronic information dissemination per se is minimal.
- The advent of electronic dissemination raises new equity concerns since, to the extent electronic formats have distinct advantages (e.g., in terms of timeliness, searchability), those without electronic access are disadvantaged. In general, library, research, media, consumer, and related groups

argue that the Federal Government has a responsibility to assure equity of access to Federal information in paper and electronic formats.

- Technological advances complicate the Federal Government's relationships with the commercial information industry. While those companies that market repackaged or value-added Federal information (e.g., with additional indexing or analysis) benefit from access to electronic formats, some of these firms are concerned about possible adverse effects of government competition and oppose government dissemination of "value-added" information. This conflicts with the long-established government role in producing and disseminating value-added information products in paper format and its logical extension to electronic formats.

OTA concludes that congressional action is urgently needed to resolve Federal information dissemination issues and to set the direction of Federal activities for years to come. Congress needs to provide direction to existing agencies and institutions with respect to electronic information dissemination. Key policy alternatives are listed in the box below.

Copies of the OTA report, "Informing the Nation: Federal Information Dissemination in an Electronic Age," are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402-9325. (202) 783-3238. The GPO stock number is 052-003-01130-1; the price is \$14.00. Copies of the report for congressional use are available by calling 4-8996. Summaries of reports are available at no charge from the Office of Technology Assessment.

Key Policy Alternatives

Options for the Government Printing Office

- strengthen the GPO role in standards-setting, training, and innovation relevant to electronic publishing.
- include selected electronic information formats and products in the Superintendent of Documents sales program (while preserving the prerogatives of agencies to disseminate electronic information themselves and of private vendors to further enhance and resell electronic information).
- improve traditional GPO printing services through more competitive pricing and delivery, itemized estimating and billing practices, surveys of customer needs and problems, and revised and strengthened GPO advisory groups.
- accelerate the introduction and use of electronic formats for the *Congressional Record*, *Federal Register*, and other key governmental process information products.

Options for the National Technical Information Service

- decide where NTIS should be located within the Federal Government and how it should relate to other Federal agencies, including what materials agencies should submit to NTIS.
- develop and implement an electronic document system, using a range of electronic publishing technologies.
- increase the cooperation with the Superintendent of Documents in regard to indexing, marketing, and international exchange of Federal information.

Options for the Depository Library Program

- offer electronic formats and products for distribution to depository libraries.
- conduct pilot projects, demonstrations, and tests involving various electronic technologies, financial arrangements, and delivery mechanisms (including possible involvement of the private sector).
- consider a reorganization or restructuring of the Depository Library Program in light of both electronic options and the evolving nature of libraries and the telecommunication infrastructure.

Options for Technical/Management Improvement

- establish governmentwide technical standards on text markup, page/document description, optical disks, and other areas important to electronic information dissemination.
- establish governmentwide information index to major Federal information products, regardless of format.
- establish agency innovation centers to exchange learning and experience about technological innovations and user needs relevant to electronic information dissemination.
- revise the information resources management program to give information dissemination a stronger role.
- establish an electronic press release service for dissemination of time-sensitive Federal information directly to the press, via private electronic news and wire services, and to the Depository Library Program taking care that the needs of smaller, less affluent or technically sophisticated, and/or out-of-town news organizations are met.

Options for Statutory Change

- amend the Printing Act, Depository Library Act, and/or Paperwork Reduction Act to provide statutory direction for specific institutional and technical/management alternatives as well as to provide general philosophical guidance on electronic information dissemination.
- legislate a renewed congressional commitment to public access to Federal information in an electronic age.
- legislate a governmentwide electronic information dissemination policy, including more specific guidance on the role of the private sector, contracting out of Federal information dissemination, user charges, and provision of value-added information products.
- amend the Freedom of Information Act to bring electronic formats clearly within the statutory purview, and define the scope, fees, and procedures for FOIA requests and searches in an electronic environment.
- amend FOIA to function more broadly as an "access to information" statute rather "access to records" statute.

Options within the legislative branch

- establish a strategic direction for electronic dissemination of legislative branch information.
- determine how to ensure that electronic congressional information is available to the public, and how that information should be made available (by GPO, congressional offices, depository libraries, and private vendors).
- establish a coordinating mechanism of House, Senate, and support offices involved with the dissemination of congressional information, to maximize the exchange of learning, minimize potential overlap, and take advantage of opportunities for technologically enhanced access.

**COMMISSION OF THE
EUROPEAN COMMUNITIES**

***Guidelines for improving the synergy
between the public and private sectors
in the information market***

**Directorate-General
for Telecommunications,
Information Industries and
Innovation**

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FOREWORD

Information is considered more and more as a motor for the industrial development of the Community within a highly competitive world market. The setting up of an information services market as decided by Council on 26 July 1988¹ is a major aim in the Community's overall strategy.

It is recognized that a strong and healthy information market in the European Community can only be achieved through the work of a wide range of participants. As is recognized in the plan of priority actions for the setting up of an information services market, the public sector has an important role to play, as a major producer of basic data and information, as a provider of information goods and services and as a major consumer. According to the way it functions, it can either encourage or hinder initiatives leading to the development of a strong European information industry.

To promote optimal synergy between public sector support and private sector initiatives, the Commission undertook a series of consultations and discussions with representatives of the public and private sectors of the European information market in all Member States. As a result, the Commission has now produced 'Guidelines for improving the synergy between the public and private sectors in the information market', which have been endorsed by the representatives of the

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¹ OJ L 285 p 39, 88/524/CEC

Member States meeting within the Senior Officials Advisory Committee (SOAC).

Guidelines are considered essential in order to help the public sector in decision-making related to making information available for external use and supporting the development of the information market; and to establish certain ground rules for avoiding possible unfair competition.

The guidelines, which are advisory only, are aimed at providing a basic set of generally agreed principles and recommendations which can be used in the development of national guidelines in individual Member States. They are in no sense directives, but it is hoped that they will, by virtue of their production at the Community level, support national initiatives designed to promote the growth of the European information industry.

C. JANSEN VAN ROSENDAAL

INTRODUCTION

Governments and public sector bodies collect large amounts of data and information, as part of their routine functions, which could be made available to the private sector for the construction and marketing of electronic database services. The private sector is well placed to combine information from a variety of government sources, and its prime function is to produce and distribute information products oriented to the needs of the market. In order to develop and strengthen the information industry, a positive initiative is required from governments, to encourage the use and exploitation of public sector data and information. However, there are few convergent policies or guidelines within Member States relating to the role of the public sector in this area. In addition, if there are different policies operating in the different Member States, then it will be very difficult to develop the market. It is therefore desirable that national policies, as far as they exist, be coordinated at the Community level in order to allow the majority of the EC countries not yet having such a policy to follow these orientations on a national level.

In the following text, the guidelines are numbered, and explanatory material is printed in italic.

GUIDELINES FOR IMPROVING THE SYNERGY BETWEEN THE PUBLIC AND PRIVATE SECTORS IN THE INFORMATION MARKET

THE PUBLIC SECTOR AS A PRODUCER OF BASIC DATA AND INFORMATION

Following the general principles used in the European System of Integrated Economic Accounts (ESA) (Sector 60, general government), the public sector includes central and local public administrations, which administer and finance a group of activities, principally of a non market nature, intended for the benefit of the community, and institutions whose principal resources are derived from public funds. Organizations wholly or partly owned by the public sector and operating under the normal rules of the market are considered for the purpose of these guidelines as being in the private sector.

In the following guidelines, 'exploitation' may include some or all of the activities involved in the production, manufacture and distribution of value-added information services. Electronic information services include all products and services originating from binary storage in a computer.

1. Public administrations regularly and systematically collect basic data and information in the performance of their governmental functions. These collections have value beyond their use by governments, and their wider availability would be beneficial both to the public sector and to private industry. Public organizations should, as far as is practicable and when access is not restricted for the protection of legitimate public or private interests, allow these basic information materials to be used by the private sector and exploited by the information industry through electronic information services.

Information to which access would be likely to be restricted includes material relating to national security, external relations, the safety of the State and public security, matters sub judice.

personal privacy and personal data, commercial and industrial confidentiality, and in general any material required by law to be held in confidence. When availability of data or information for use or exploitation is denied to the private sector, an explanation of the reason for non-availability should be given.

2. Member States should compile and publicize guidelines defining the conditions of release, use and exploitation of public sector data and information.

National or regional guidelines of greater specificity, developed by consultation with the appropriate bodies, are required to take account of the different conditions prevailing in the individual Member States.

3. Basic data and information collected by the public sector should be regularly reviewed, with regard to the possibility of their further use, and exploitation.

If consideration is being given to the harmonization of public sector data and handling procedures in the interests of greater efficiency, regard should also be paid to the possibilities for easier use and exploitation of the information by the private sector. If circumstances permit, it may be advantageous to involve the private sector in the review process.

4. The availability of basic data and information should be publicized to the private sector, and the procedures by which it can be obtained and used or exploited should be made clear. Negotiation procedures and pricing principles should as far as practicable, having regard to the characteristics of the data or information, be harmonized across public administrations.

The establishment of an advisory body, able to coordinate and share among administrative bodies experience of negotiations with the private sector of the information industry, and the development of model contracts, are measures likely to promote uniformity of procedures.

Pricing policies may vary depending on the nature of the information. A price should be established which reflects the costs of preparing and passing it to the private sector, but which does not necessarily include the full cost of collecting and handling it in the course of routine administration. The price may be reduced if provision of the resulting information service is deemed to be necessary in the public interest. Public sector accounting procedures should not impede receipt of payment for information or services sold.

5. When public sector information or data is released for exploitation by the private sector, restrictions should not normally be placed on the types of customer or the territories to which the resulting service may be made available.

The general principle is that no unnecessary barriers to the flow of information across borders should be imposed.

6. Contracts or other arrangements with private sector database providers or host services should not grant exclusive rights if they lead to distortion of competition. If, for reasons such as the penetration of a new market or provision of a service in the public interest, an exclusive right is deemed necessary, it should be subject to regular review.

THE PUBLIC SECTOR AS A PROVIDER OF ELECTRONIC INFORMATION SERVICES

7. The public sector should adopt policies and procedures which encourage investment by the private sector in the development of information services based on public data.

The database industry is characterized by low levels of investment and risk aversion among the traditional publishing or manufacturing groups which have entered the market. Use of public sector data and information presents an opportunity to encourage

the private sector in the provision of electronic information services.

8. When a public administration provides electronic information services directly, it should avoid any practice which leads to the distortion of competition. Before establishing a new electronic service or continuing an existing one, public administrations should consider whether an existing private sector service can be used or adapted to meet their requirements.

Reasons for which the public sector might develop and support electronic information services could include, amongst others, the following examples:

- (i) where the service is deemed to be essential to the public interest, but the private sector is unwilling or unable to offer it on reasonable terms;*
- (ii) where it is an inseparable part of public sector tasks;*
- (iii) where a visibly neutral service, independent of the private information industry, is required.*

9. Electronic information services directly supplied by the public sector should be regularly reviewed, with a view to deciding whether their provision by the public or private sector is most appropriate, or whether the involvement of the private sector in their production or distribution, or their replacement by appropriate commercial services is desirable.

The public sector could, for example, develop databases and then consider offering them to the private sector, or could offer the distribution rights of public sector databases to the private sector. In order that the taxpayer may share in the rewards of success when databases which have reached commercial viability are transferred, a royalty payment in addition to the negotiated price may be considered appropriate.

10. Electronic information service entrepreneurs in European Community countries should be treated on an equal footing irrespective of their country of origin within the European Community.

The offer of, for example, rights of exploitation of public sector data or information should be made on an equal footing to all EC hosts, no special advantage being given to national hosts.

PUBLIC SECTOR SUPPORT OF INFORMATION SERVICES

While as yet no common procedures for public support have been established, in this relatively new sector certain ground rules ought to be observed.

11. Support from the public sector may only be given in accordance with the European Community rules on competition, as expressed in Articles 92 and 93 of the Treaty, on aids granted by States.

12. Subject to the provisions of Guideline 11 above, direct or indirect financial support from the public sector may be provided to encourage pre-competitive research and development, and to encourage the emergence of new market sectors.

Public support can be given provided that reasonable and non-discriminatory procedures are set up to transfer the R&D results to interested organizations within the Community who wish to exploit them commercially. Public support should cover only part of the investment costs during development and start-up phases, and not ongoing operating costs of services, and such support, limited in time, should not generate unfair competition for existing services.

13. Public assistance may also be provided to develop and maintain information services which cannot become viable on a commercial basis but which are necessary in the public interest. Public assistance may also involve reducing linguistic barriers to the use of existing databases of European origin, by making them accessible in other languages.

14. As part of the process of stimulating the development of the information market, consideration should be given to the establishment of joint ventures between the public and private sectors.

Support can also be given by the public sector to the establishment of new electronic information services in the marketplace, by acting as a 'launch customer' and guaranteeing the purchase of an agreed amount of appropriate service provision.

15. Conditions governing application of public support to users of European electronic information services should not discriminate against these services on the basis of their European Community country of origin.
16. Public sector accounting and budgetary procedures and exchange controls should not prevent access by interested public departments to electronic information services throughout the Community.

LEGAL AND STATUTORY RESPONSIBILITIES

17. The public sector should strive to eliminate unjustified legal or other obstacles to the use of public information by the private sector and its exploitation by the information industry, while ensuring that commercial and other confidentiality considerations and civil and criminal liability are respected (see Guideline 1).

Public administrations should, for example, be clear in the applications of rules for classification of information.

18. The public sector should, to the highest extent possible, make use of the discretion given under Article 2 (4) of the Berne Convention to exempt from copyright texts of a legislative, administrative or legal nature and official translations of such texts. In the case of texts falling under the copyright convention, the public sector ought not to award exclusive right of reproduction to a single organization as this might hinder value enhancement by other users.

Article 2 (4), as revised at the Stockholm Copyright Convention, 1967, states that 'It shall be a matter for legislation in the countries of the Union to determine the protection to be granted to official texts of a legislative, administrative and legal nature,

and to official translations of such texts'. The aim is to adopt the most favourable interpretation of the Convention in order to encourage the private sector to create advanced information services.

19. When public sector information or data is made available for private sector use or exploitation, any pre-existing citizens' rights of access to the original information as determined by legislation must be preserved.

The individual should continue to be able to have access to such information on the same terms as obtained before its release to the private sector.

European Communities — Commission

Guidelines for improving the synergy between the public and private sectors in the information market

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Geographic Information Systems: Issues Arising from the Proliferation of Information

Phillip Parent

Phillip Parent is a consultant with BSI Consultants, Inc. in Oakland, California. Formerly associated with the National Center for Geographical Information and Analysis, he has a background in survey, publications, hazardous waste management, and management of geographic information systems.

Abstract: Geographic information is proliferating at an unprecedented rate due to the use of computer technology in mapping and spatial analysis applications. Three basic issues must be addressed in order to ensure the effective management of this flood of information: accuracy, access, and applicability. Accuracy, which is inversely proportional to uncertainty, can be compromised in a spatial database in three ways: data capture, analysis, and compatibility. Each of these operations can introduce error and skew results. Access and privacy is another issue arising from this proliferation of information. Data accessibility should balance the public's right to know with the individual's right to privacy. Public agencies are obligated to release raw data but not processed information on request. Integrated databases compiled by public agencies can be viewed as resources that can be marketed to the commercial sector. Applicability of information leads to effective decision-making, the satisfaction of end-users and, for public agencies, equitable access in the sense that the public can have the same information on which decision-makers base their decisions. Databases generated and maintained at the application (end-user) level are generally more productive initially than large-scale corporate systems. However, such databases are sometimes only effective in applications where the data are compatible with the original intended use. Thus there is a trade-off between application (single purpose) databases and corporate (multi-purpose) databases. Consensus among users on data compatibility and goals in the initial stages of implementation will increase long-term effectiveness. Databases must be designed with the flexibility to shift as applications mature.

With the advent of modern computer technology, it is possible to generate an overwhelming amount of output with very little effort. In fact, automation can reduce not only the effort but also reduce the amount of thought required in the production of reports, maps, and in data analysis. Data, initially unedited observations of physical phenomena that have been effectively captured, stored, processed, analyzed, and presented in a timely and comprehensible way, are an asset. These data can be classified as

information, which has been defined as the antidote to uncertainty (Epstein 1987). Data that don't meet these standards are useless as they tend to obscure relevant information. Specific issues arise as more private and public agencies amass large databases. Most of the research in the field of geographic information and analysis has been focused on the technical aspects of developing and operating geographic information systems (GIS). Little has been written on the manage-

ment of the information generated in respect to GIS. However, as more systems come online and mature, the issues arising from the proliferation of information will gradually make their way to the forefront of social science research.

This paper will identify and discuss three major areas that need to be fully explored: (1) accuracy; (2) access and privacy; and (3) applicability, which impacts the long-term effectiveness of a system. These are by no means the only issues

tance that compatibility should not only be considered for questions of scale and resolution, but also for the original purpose of the data gathering. This problem of incompatible applications for the same data could be another stumbling block for shared databases.

Accuracy, then, can be distilled into three basic areas: data capture, analysis, and compatibility. Although resolution and documentation play an important role, these issues in and of themselves are not the deciding factors. High resolution and documentation do not guarantee accuracy and reduce uncertainty. What will ensure accuracy is care on all levels that the data are handled in an appropriate and responsible way by competent professionals well-schooled in the intricacies of GIS.

Access and Privacy

The dilemma of the public's right to know versus the individual's right to privacy is an issue that will receive increasing scrutiny as individual databases become part of an integrated whole. The relationship between data and information is the basis for any investigation of access and privacy. In accordance with the federal Freedom of Information Act of 1966, data that are publicly held should, with the exception of proprietary records such as geophysical exploration records that must be filed for mineral claims and the like, be available to the general public. Generally speaking, agencies are required to disclose information in the format in which it is held.

However, once the data are processed and analyzed, the public's right to access is diminished. For instance, agencies are not required to create new reports or formats in response to requests. Indeed, agencies do not even have to provide data in a readable form. As a rule, agencies may only recover their costs for reproducing the data, not the costs of producing them. Other factors that enter into the question of access are staff time to handle information requests and the re-use of data and the motives behind the request (Roitman 1986).

A different issue is the problem of private companies—credit bureaus, for example—that hold extensive databases on individuals. Should this information be regulated? Should it be public domain? With the ease of building and maintaining electronic databases, these issues eventually will have to be addressed. (Indeed, during the recent Bork hearing for the Supreme Court, eyebrows in Washington, D.C. were raised when a video store released the record of the movies Judge Bork rented. Although no embarrassing titles were found, the potential for abuse caused lawmakers to think about the possible ramifications of an information society gone wild.) Although there has been some excellent research on the privacy issue (Roitman 1987), there is certainly room for further study as it is an issue that will only become more important as GISs become more popular.

A public agency such as a planning department can build a sizable database consisting of tax assessment data, cable TV hookups, zoning designations, noise levels, water use and so on. Other agencies with their own data layers, such as police departments with crime-type and frequency maps, health agencies with violation maps, or school districts with bus route maps, could integrate their data and process the information. Indeed, private companies that specialize in the gathering, repackaging, and selling of information can reap huge profits. By spatially addressing this information, entire new approaches to marketing can be created. The applications for such a comprehensive database for private enterprises are substantial. Real estate firms, pollsters, direct marketing companies, and political groups among others could utilize these databases for targeting select market segments. However, few public agencies are in the business of data dissemination. They are service oriented and have acquired this data to support their mandated public duties, not as a marketable asset. An agency with such an integrated database might not have the extra staff to make this data available and is under no obligation to re-format, tabulate, or process the data for the public.

Two major groups are affected by the issue of data access: Public agencies that control the databases but are not in a position to process or market them due to economic and

political constraints, and private entities that would like to utilize the data. There are two approaches they could take. First, the private companies could request the individual raw data layers from each agency and format, process, and tabulate the resultant information themselves. This would effectively limit access to individuals and companies that have the economic or technical resources to undertake such a project. The other approach would be for the public agency involved to set up a semi-private entity to archive, format, process, tabulate, and market the databases. The entity could be non-profit or for-profit and services could range from simply gathering and re-formatting data to developing analytical software to improve the information content.

An advantage of the second approach is that the integrity of the databases could be preserved, an important consideration if the available data are generated from many different sources. Privacy could be guaranteed by having restricted databases reside in the generating agency. A single chartered entity controlling the access and distribution of data would ensure compatible formats, consistent documentation, similar scales and cartographic conventions, and the avoidance of unnecessary duplication. It would also ensure equal access to a diverse set of users. This is the way that Japan is developing its centralized GIS under the aegis of the Ministry of Construction (Okabe 1988).

Of course, this is a long-term solution that requires

political sponsorship, start-up funding, and the support of the private sector. However, cooperation between the private and public sectors on the local level is increasing. If public databases and the information that results from data processing are readily available to all segments of society at a reasonable cost, the issue of access will not be a controversial subject. If the data are carefully gathered and private information shielded, the "big brother" concerns of some social critics can be avoided. However, there are no guarantees that this will be the case.

Applicability of a GIS System

The applicability of a system and the information contained within it directly impact the effectiveness of that system as a management tool. A fundamental question of all managers trying to implement a system is how can an agency measure the effectiveness of an integrated geographic information-processing system. Effectiveness, defined as the value of enhanced decision-making from increased analysis capabilities, and improved information availability/attributable to the information system (Prisley and Mead 1987), can be interpreted at two levels. At the first level, it can be an improvement of end-user and over-all organizational productivity due to system application (Nunamaker and Konsynski 1986). By taking a larger view, effectiveness can be viewed as the balance between equality (the doctrine of

equal rights) and equity (the concept of fairness) (Chrisman 1987). The narrower definition is based on internal productivity at the agency level while the broader definition deals with the impact of the system on the public at large. This impact, although hard to quantify, is intangible benefit that should be taken into account in a cost/benefit analysis (Prisley and Mead 1987).

Measuring an increase in internal productivity, necessary for the first definition of effectiveness, is an ongoing process starting at the earliest stages of conceptual planning. Initial productivity measures range from profits and operating expenditures to customers served to maps produced and so on (Schmidt 1979). Production goals must be decided upon before undertaking an implementation project. By comparing the impact of a GIS to the stated goal of the GIS effectiveness can be ascertained.

This traditional approach to effectiveness is being altered by changing technology. Distributed processing is becoming an attractive alternative to centralized data management. Networking capabilities are being upgraded and stand-alone work-stations are becoming less expensive. In addition, users are becoming more computer literate. Every planning department now has people who feel more comfortable behind a CRT screen than a drafting

THE GOVERNMENT PULSE

AGENCIES

Ending the Government's Paper Chase

By Judith Havemann
Washington Post Staff Writer

In a nondescript building in Washington, D.C., Federal Maritime Commission clerks manually insert changes in 800,000 pages of shipping rates in 5,000 green binders each year, using horse-and-buggy technology to regulate the commerce of the space age.

By 1991, these records will be computerized and made instantly available to anybody who wants to know how much it costs to ship anything by ocean around the world.

The transformation of the commission's records is an example of a process that will become increasingly common as the government moves toward "paperless" agencies by the year 2000.

But as records change from sheets of paper into electronic bits, widespread confusion prevails as to whether records like those of the Maritime Commission should be made easily accessible to the public, in what form and at what cost, and whether the government should release the information itself or turn it over to the private sector.

"The laws and policies that spell out citizen access rights to government information in the age of electronic government are woefully out of date," the American Civil Liberties Union (ACLU) has said.

Congress will take up legislation to update the government's "information dissemination policy" when it reconvenes this year.

The bill is called the Paperwork Reduction Act, and, in addition to continuing a long-standing effort to cut down on the forms the government requires citizens to fill out, it seeks to commit federal agencies to a policy of openness and disclosure when it comes to government information.

For the first time, a bipartisan House bill carries the word "electronic" in its informa-

But computerized records pose a host of new questions

tion-policy language, telling the government to release, "to the greatest extent practicable," information maintained on computers in "usable electronic formats."

Although information policy sounds as controversial as motherhood and apple pie, it has been a contentious issue in recent years while the Office of Management and Budget established policies favoring the private sector over the government.

The Reagan administration's Office of Information and Regulatory Affairs at OMB required that federal agencies place "maximum feasible reliance on the private sector for dissemination of [information] products and services."

The policy has been dramatically modified in favor of public access under President Bush, but Congress has not been satisfied.

"We want to bring organization to dissemination anarchy," says Democratic Rep. Robert E. Wise Jr. of West Virginia, whose subcommittee on government information, justice and agriculture worked out the information dissemination language in legislation introduced in the House by the chairman and ranking minority member of the House Government Operations Committee.

Under the bill, a government agency would no longer have to step aside if a private firm was interested in selling its information. Instead, federal agencies would have to consider whether an equivalent product or service was available and "reasonably achieves the dissemination objectives of the agency product or service" the agency was about to offer.

The issue grows in importance as more and more information is stored in government computers. The Securities and Exchange Commission is developing an Electronic Data Gathering System (EDGAR) that will handle 6 million pages of security filings per year,

the Patent Office is creating an Automated Trademark System, and the Transportation Department is developing an electronic system for international tariff filings.

So far, most of the new data systems are in agencies that regulate businesses, says Jerry Berman, director of the Information Technology Project for the ACLU.

But, he says, "the benefits of electronic information systems are not being equitably or widely shared by the public at large."

Although the Environmental Protection Agency recently began offering an electronic service that tells the public what toxic chemicals are being released throughout the country, "there are no large-scale dissemination projects underway at agencies such as Justice, Health and Human Services or HUD," Berman says.

Berman says more than 440 government data bases exist without a government index system detailing where they are or how to use them.

In the case of the Federal Maritime Commission, electronic versions of some or all of its records have been compiled for about five years at private expense and sold to customers.

When the commission proposed converting its records to electronic format, the private firms that had been key-punching records into computers and selling the information to steamship companies and others questioned whether the agency should "reinvent the wheel."

After a long battle, Congress allowed the agency to provide electronic information directly to the public, but in a relatively raw form—leaving the door open for private firms

to "crunch" the numbers into more usable formats for customers.

Today, "everybody supports the Federal Maritime Commission modernization," says Ronald Plesser, an attorney for the private providers of information.

Republican Rep. Frank Horton of New York, ranking minority member on the Government Operations Committee, predicts that the paperwork bill will sail through the House on the noncontroversial calendar of measures.

It has the support of most industry and public-interest groups, except one big one—the American Library Association.

The association opposes the Wise provisions because of its suspicion of the Office of Management and Budget.

Under the bill, the OMB director would be required to "guide" a agency information policy, following the guidelines laid out in the law.

"As librarians we know that information is power and if this goes through it will give OMB a lot of power over information," says Anne A. Heasue, an official of the Library Association's legislation committee.

"We have seen OMB in operation," says Patricia Schuman, chairman of legislation for the association. Its role would have a "chilling effect" on agencies releasing information, she says.

But the Information Industry Association, a group of 850 information companies, sees little problem with the legislation.

"We don't believe it gives OMB any more power than it has now. . . . This is the first statute setting out the right of access. Where we once argued against government competition we now believe the best way to get information to citizens is sometimes government and sometimes private."

Gary Bass, head of the citizen organization OMB Watch, says the measure "goes a long way toward advocating greater accountability for both OMB and the entire government." ■

HB 405 =

4.25.90

Kelly - if so good, why exempt?

Failes - reluctance on everyone's behalf.
Not fair what Tourism got away with

Bush - Except MOA, exemptions are from
TIC. Not from all public access.

MOA/ Employees rights should equal state rights
Sid Robertson -

Brown

John McKay = Reject MOA.

MOA amendments = less disclosure
MOA has not complied with state laws
thus far.

AK. Supreme Court req. files -

Terry Schiescher = Reject MOA

DPS = #7

↳ requires fingerprints on other people

Kelly? Access to?

600 Terminals, 2500 users

Failes - will contact Schliescher

Kelly: Request ACLU opinion

BUSH: LOOK AT AMENDMENT -

HB 405

Terri^o

CS Legal

• Adam's: Amendment "subcommittee" OK

• BROWN - ULMER AMENDMENT
Take out Sec. 10

• Adam's =

McKay and Fleischer: 276-3390

U of A: difficult to bring under state law
under TIC

MOA: preserving status quo

- Each municipality would have to be dealt with differently
- Allow MOA to adopt regulations which increase public access.
- Supreme Court...

HB

452



Alaska State Legislature
Senate

Office of the Secretary

OFFICIAL BUSINESS

P.O. BOX V
CAPITOL BUILDING
JUNEAU, ALASKA 99811

FOR YOUR IMMEDIATE ATTENTION

DATE: March 6, 1990

TO SENATE COMMITTEE: STATE AFFAIRS

FROM: Office of the Senate Secretary *JKR*

The Chairman of the above-referenced Committee has waived the Committee referral on the following bill(s):

CS FOR HOUSE BILL 452 (SA) am

Office of the ombudsman and to the powers and duties of the ombudsman.

Thanks.

Please give the bill file(s) to the page delivering this message for forwarding to the next Committee of referral.

Thank you for your prompt attention to this request.

JR/s



State of Alaska
Ombudsman

Duncan C. Fowler

April 26, 1990

Senator Pat Pourchot
Alaska State Senate
Post Office Box V
Juneau, Alaska 99811-3100

RE: SCS CSHB 452 (Res),
Proposed ombudsman legislation

Dear Senator Pourchot:

Thanks for offering to handle this bill on the floor. The last person that had concerns about the bill has agreed to pass on them for now. The Senator agreed to advise the Chair of Senate Rules that he no longer has objections. Staff from Senate Rules advised me the bill could be on the floor as soon as April 27.

Here is some information to provide background for you on the bill's issues. This bill is truly a product of the legislative process. It was introduced at my request by the Legislative Council, heard in the House by State Affairs and Rules. It was amended on the floor of the House. It has been reviewed in the Senate by Judiciary, Resources and Rules. This final version is the product of comments and agreements from the Attorney General's civil and criminal divisions, Art Snowden of the Court System, the Department of Public Safety, the Public Defender, the Alaska Association of School Administrators and Association of Alaska School Boards.

There is a zero fiscal note associated with this bill. If passed, this bill would significantly improve and strengthen my office's ability to function as an independent investigative agency within the legislative branch of government.

Despite the fact the Alaska Ombudsman Act is considered model legislation, weakness have been identified over the past 15 years. The proposed bill offers solutions to those weakness.

The improvements are:

- * a provision to keep preliminary reports to agencies confidential while agencies prepare responses to ombudsman investigations; and
- * a provision to ensure the ombudsman's access to confidential records and a provision that the ombudsman maintain the confidentiality of those records.
- * General administrative changes such as:

Reply to:

- P.O. Box 102636
Anchorage, AK 99510-2636
(907) 563-3673
(800) 478-2624
- P.O. Box W0
Juneau, AK 99811-3000
(907) 465-4970
(800) 478-4970
- P.O. Box 74358
Fairbanks, AK 99707
(907) 452-4001
(800) 478-3257

Kentula

- requiring the appointment of a designee should the ombudsman become incapacitated;
- formalizing the office's relationship with the Legislative Affairs Agency (LAA);
- giving the Legislative Council authority to review the ombudsman budget prior to submission to the finance committees;
- allowing oral notice (rather than letters) to advise some complainants of the results of our review; and
- simplifying and clarifying the process school districts must follow to contract for ombudsman services.

The following is a discussion of each section of the proposed legislation.

Sec 1-3, 13) Appointment of an acting ombudsman

These sections require the ombudsman to designate a person to act in his/her place to ensure the orderly continuation of the Office of the Ombudsman should the ombudsman become incapacitated. Current law makes such an appointment permissive. All but one of the previous ombudsmen have chosen to make such an appointment. Not having a designated successor creates the potential of a crisis within the office. In that case, no person would have the statutory authority necessary to issue findings or recommendations as required by the Ombudsman Act should the ombudsman become incapacitated.

Sec 4) Administrative support - Legislative Affairs Agency

This section formalizes the relationship the ombudsman has enjoyed with the Legislative Affairs Agency (LAA) for the past 15 years. Current law was really intended to help open the doors of the Office of the Ombudsman in 1975, its first year of operation. It required the Legislative Council to provide the ombudsman "suitable space and equipment." Currently, the LAA provides data processing support both with our main frame applications and some of our equipment. The Legal Division provides occasional advice and opinions.

Sec 5) Legislative Council to review budget

The ombudsman budget has historically been submitted directly to the finance committees. This section requires the ombudsman to submit the budget to the Legislative Council for review and approval. This is consistent with budgeting procedures in other states with ombudsman offices: Nebraska, Iowa and Hawaii.

Sec 6, 9, 10, & 15) Access to Confidential Information

These sections clarify the ombudsman's access to confidential records in the possession of state agencies. Currently we rely on regulations to provide agencies with the assurance that their confidential records and information

will be properly handled. It would be more appropriate to clarify our access in statute.

Clear access to confidential records is critical for the ombudsman to do a credible job investigating several types of citizen complaints. This issue has also been the source of the majority of Attorney General opinions involving the ombudsman's office in the past 15 years. In fact, two are pending completion now.

In most cases we are able to receive releases for access to confidential medical, financial or case record data from those citizens who complain about their treatment. Many times while we investigate those complaints we find what appears to be system-wide problems but are prevented from verifying our suspicions. We are unable to access the names or files of other Alaskans in similar situations to test our concerns. I believe that in several of those cases we could have prevented problems for many more citizens other than just our complainants.

It should be noted that just because the ombudsman has greater access to confidential information, it does not allow the ombudsman to release that information to the public or other government agencies. The ombudsman would have no additional privilege to release that information than the agency that is the original custodian of the data. It should be noted also that ombudsman investigative files are confidential and staff are prevented by statute from testifying in court about matters brought before them.

The terminology used in Sec. 9 is similar in concept to Legislative Audit's statute. Section 6 makes it clear the ombudsman may implement regulations to provide the mechanisms to protect the confidentiality of the records we access. Sections 10 and 15 help define what a "record" is for the purposes of these sections.

I have enclosed copies of our existing regulations for handling confidential records and information. These regulations describe in detail how this office handles confidential information. Please note a process exists to mediate disagreements with agencies about the confidentiality of records. A provision allows for the courts to determine whether or not a record is in fact confidential.

Several agencies have offered amendments which have been included in this bill. These amendments have strengthened the bill. The court system asked that sealed court records only be accessed by subpoena. Public Safety and the Criminal Division of law asked that *active* police investigations and records identifying confidential police informants be excepted from review. This was to ensure the integrity of evidence in active criminal investigations. The amendment limiting access to the identities of confidential police informants was offered to protect the physical safety of the informants. Senate Resources provided that confidential oil and gas geological and geophysical data be exempt from review. The Public Defender asked that privileged communications between attorneys and clients be excepted as well.

Several legislators have asked me if there was anything which would hold ombudsman staff responsible for protecting the confidentiality of information obtained during the course of their work. Criminal statutes do provide penalties for those who would misuse information confidential by law. AS 11.56.860 makes the misuse of such confidential information a class A misdemeanor. Like any other public servant, if ombudsman staff ever violated that statute, (even after leaving our employment) and were convicted of that offense they would be subject to a fine of \$5,000 and one year in jail. In addition, I would consider such a violation contrary to office policy and would consider it a basis for termination of the employee.

Sec 7 & 8) Oral Notification

Each year the Office of the Ombudsman receives thousands of complaints and inquiries. We will exceed 11,300 this year. Most are received by telephone and a large number of these complaints are handled as "assists" or are "decline/advise" as premature complaints. We either "fix" the citizen's complaint with the state agency or provide the necessary guidance during that phone call. Citizens often know the disposition of their complaint by the time they hang up the phone. Current law requires written notification of the complaint's disposition to all complainants. Current staffing does not make this practicable. Further, even if given extra staff, I do not believe maintaining such a requirement would provide a better service to Alaskans.

These amendments allow oral or telephonic notification of either the intent to investigate or to decline a complaint. This has been the practice for the past 15 years and would bring our historical practice into compliance with the statute.

Sec 11 & 12) Preliminary Report Confidential

The Ombudsman Act makes it clear that records of the ombudsman are confidential and can only be released "insofar as disclosures may be necessary to carry out [the ombudsman's] duties." The problem comes when a preliminary report which is critical of an agency is sent to the agency for review and comment. It is important to understand that there are many parallels between our preliminary investigative report and a preliminary audit report issued by Legislative Audit. That process should allow an orderly procedure for an agency to dispute "facts" found in an ombudsman preliminary report and offer alternative methods of correcting our proposed recommendations.

Currently the preliminary report, once in the agency's hands, becomes subject to media access through the public information regulations (6 AAC 95). In the past, some agencies have felt compelled to release our preliminary report even though it contained areas of potential factual disagreement.

This legislation prohibits the release of the preliminary report to the public by any of the participants. It offers protection to the agencies during the period of comment and review. This is similar to the handling of Legislative Audit reports.

Sec. 14) Municipalities and School Districts

This section provides a mechanism for a school board to choose ombudsman services *independently* from the local governments' assembly or city council.

Recently, the City and Borough of Juneau School Board became the first school board to consider ombudsman services. When we considered the procedures necessary to implement such jurisdiction, it became apparent that no simple or independent method was provided to allow school boards the ability to make that decision. This is despite the fact the Alaska Ombudsman Act seems to envision such services for schools. This amendment to the Ombudsman Act allows school boards to choose or terminate jurisdiction by the Office of the Ombudsman by resolution independently from decisions made by another elected body. Neither the Alaska Council of School Administrators nor the Association of Alaska School Boards found objection to this provision.

Failed Amendments offered on the House Floor:

(1) To remove Corrections from the jurisdiction of the Ombudsman. I sent the enclosed letter to House members explaining we helped minimize the state's liability exposure by our availability and reviews. It failed.

(2) To place the Governor and Lt. Governor, individually, under the jurisdiction of the ombudsman. I asked that be defeated as the actions of elected officials are more properly reviewed by the voters. The ombudsman provides review of "bureaucrat's" actions.

Please let me know if you have any questions regarding the Office of the Ombudsman or this proposed legislation. I appreciate your support of what I believe to be important improvements to Alaska's Ombudsman Act.

Sincerely,



Duncan C. Fowler
Ombudsman

DCF:pjc
Enclosures



State of Alaska
ombudsman

Duncan C. Fowler

Reply to:

- P.O. Box 102636
Anchorage, AK 99510-2636
(907) 563-3673
(800) 478-2624
- P.O. Box WO
Juneau, AK 99811-3000
(907) 465-4970
(800) 478-4970
- P.O. Box 74358
Fairbanks, AK 99707
(907) 452-4001
(800) 478-3257

February 25, 1990

Members of the house
Alaska Legislature
Box V
Juneau, Alaska 99811

RE: HB 452 Ombudsman Act amendment

Dear Representative

Amendment No.2 to HB 452 was offered on the floor last Friday. It virtually eliminates the ombudsman's jurisdiction over the Department of Corrections. It would significantly decrease legislative oversight over one of the largest departments in state government. The Office of the Ombudsman does not support this amendment. I would appreciate your support of my position.

The Alaska Ombudsman Act is a model act. HB 452 was proposed to correct problems identified over the past 15 years. The Ombudsman Act contains specific provisions to insure persons held in state custody (whether it be mental, medical or correctional) have rapid and uncensored access to this office. Persons who are held in state facilities are in an unusual position. The state has virtually total control over all aspects of their daily life. Despite the fact most state employees do a good job, humans do error. And sometimes the wrong person is hired to do a job. Abuses of patients and inmates can and do occur in Alaska facilities. It is unfortunate that some have even died because of errors made.

The ombudsman fixes problems between the "keepers" and the "kept" on a daily basis both formally and informally. There are times we support decisions made by correctional managers. There are other times we find the inmate was wronged and we recommend that the agency make things right. We provide an external review and offer solutions to problems. Our review of an issue, even on an informal level, gives an air of legitimacy to many of the department's decisions in the eyes of the inmates. We are not part of that system.

No matter who the complainant is, staff are required to see what the person has done to resolve the problem. If they haven't done anything about it we explain how to fix it on their own. With inmates, this is done very quickly. With the exception of emergencies involving health or safety issues, inmates are required to go through corrections' internal grievance process. Ombudsman staff are very familiar with those procedures and can quickly provide advice to the inmate.

Ombudsman staff are urged to attempt to resolve all complaints as quickly as possible. This means that a large number of significant issues are resolved at an informal level. This is especially true with inmate complaints. Internally we use

terminology like "Assist" or "Decline/Advise" to describe the informal complaint resolution process. Here are examples of issues that have been resolved informally:

Denial of medical treatment or prescription drugs. Ombudsman staff resolve these with institutional supervisors and medical personal.

Inmate personal property and funds kept in the departments custody being lost, damaged, stolen or unaccounted for.

An officer used MACE on inmates several times without cause. No action was taken until advised we would pursue it if they didn't.

Inmate *court* papers being "lost", "destroyed" or "misplaced" by correctional staff.

We receive frequent complaints about "lost" or "never received" grievances. We review grievances that are summarily denied without reasons given. We have even received a "cop out" (preliminary grievance form) with a big red "NO" stamped on the form without further explanation. Corrections holds inmates to appeal and grievance time lines but is not obligated to do likewise. It is important that the state play by the rules. The ombudsman acts as a check on the fairness of that process.

In the past 5 years we have formally investigated 103 corrections complaints. Fifty-six percent were fully or partially justified. Examples of inmate complaints where allegations were found to be "Justified" or "Partially Justified" are:

Failure to comply with fire safety requirements in jail cell area. Inoperable smoke alarms, sprinklers and fire extinguishers.

Inmate placed in Maximum Security because superintendent had personal grudge. Appeal to the director was unfairly handled.

Staff placing untruthful incident reports in inmate's file.

Jail food was unsanitary. It had bugs crawling in it.

Agency refusal to allow an inmate to attend a civil court hearing.

Refusal to allow inmates in lock down to contact their attorneys.

Loss of engagement ring. This resulted in restitution to the inmate and significant revisions to institutional property control procedures.

Unfair and inconsistent disciplinary penalties including loss of months of "good time" and use of punitive segregation.

Many complaints involving the internal agency grievance and appeal system.

Improper handling of inmate mail. Refusal of agency to investigate resulting misconduct complaint.

Several of these complaints had the potential for litigation. Ombudsman intervention can eliminate the need for an inmate to look to the courts for relief. Alaska is already subject to a growing number of inmate law suits. In 1983 only 13 were filed. But, in *each* of the past three years more than 100 new suits have been filed. With appropriate resources, I believe the ombudsman office is a cost effective way to help stem the growing number of law suits.

Alaska is not alone in its frustrations of having to care for criminals. Three states, Michigan, Kansas and Minnesota, have only corrections ombudsman. They have recognized the liability of an improperly monitored correctional system. The states of Nebraska, Iowa and Hawaii have general jurisdiction ombudsman as in Alaska. All of the states are challenged by a large number of inmate complaints. I note that the Hawaii legislature was so frustrated with the large number of inmate complaints to their ombudsman, they passed a resolution directing the Department of Corrections to improve its grievance system.

The number of complaints about the Department of Corrections will double this year to 1272 and I am concerned about it. Many of you know I worked in corrections for several years. Please accept my observation that managing a correctional system is not an easy task. *They have the legal responsibility to be the fairest of the fair.* And to make things more difficult, when you hire humans to *contain* other humans, conflicts will naturally arise. To keep order, an effective internal and external dispute resolution process is required in a correctional setting. I believe the ombudsman is a key in that external review. We are a cost effective tool that helps insure fair and humane treatment in our correctional facilities. It helps to reduce the states liability exposure. We help increase the security of the prisons by helping to reduce conflict.

In closing, it is important for you to understand the roll of the Cleary Monitors. They are Corrections employees who are supervised and evaluated by the local institution's superintendent. They do a good job in resolving many problems and are invaluable to my staff. But, they only provide an internal review and it does make sense to keep your boss happy. In fact it is not unusual for us to get a call from a monitor asking us to pursue a problem they have been unable to resolve internally.

This past week the media reported that Corrections has been less than cooperative with this office in a couple of recent issues. I believe passing Amendment No.2 could send an unintended message to managers in the executive branch. I would appreciate your support of my position in this matter.

Sincerely,

Duncan C. Fowler
Ombudsman

agency, the agency has initiated corrective action or commits itself to take corrective action substantially as recommended.

(b) If an agency does not initiate corrective action or does not commit itself to take corrective action substantially as presented in the ombudsman's recommendation or modified recommendation, the ombudsman will, in his or her discretion, after considering any response received from the agency, submit a report of the matter to the chief executive officer of the agency or to the governor, and then make a report to the legislature, to the press, or to the public, as the ombudsman considers appropriate.

(c) The provisions of (b) of this section do not limit the ombudsman from making a report on any investigation to the legislature, the press, or the public, as the ombudsman considers appropriate. (Eff. 9/16/84, Reg. 91; am 3/28/86, Reg. 97)

Authority: AS 24.55.090
AS 24.55.200

21 AAC 20.250. COMPLAINANT TO BE INFORMED. Within 15 days after receipt of an agency's acceptance or rejection of an ombudsman's recommendation or modified recommendation, the ombudsman will notify the complainant of the result of the investigation and of the action taken or proposed to be taken by the agency. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

**ARTICLE 4.
CONFIDENTIAL INFORMATION**

Section

- 300. Disclosure of confidential information
- 310. Disclosure with written consent
- 320. Disclosure of information from public sources
- 330. Disclosure as statistical information
- 340. Disclosure to agency
- 350. Assertion of privacy interest by agency
- 360. Disclosure to the complainant
- 370. Disclosure to governor, legislature, or grand jury
- 380. Public disclosure
- 390. Definitions

21 AAC 20.300. DISCLOSURE OF CONFIDENTIAL INFORMATION. A confidential record provided by an agency or a person to the office of the ombudsman during the course of an ombudsman's investigation may not be disclosed by the office of the ombudsman except as provided in 21 AAC 20.310 - 21 AAC 20.390. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090
AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.310. DISCLOSURE WITH WRITTEN CONSENT. The ombudsman will, in his discretion, disclose a confidential record if the ombudsman first obtains the written consent of the person about whom information in the confidential record relates. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090
AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.320. DISCLOSURE OF INFORMATION FROM PUBLIC SOURCES. The ombudsman will, in his discretion, disclose a confidential record if the information contained in the record is reasonably obtainable from other public sources without the consent of the person about whom the information relates. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090
AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.330. DISCLOSURE AS STATISTICAL INFORMATION. The ombudsman will, in his discretion, disclose information contained in a confidential record as a statistical report if the person about whom the information relates is not identifiable in the statistical report. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090
AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.340. DISCLOSURE TO AGENCY. Except as provided in 21 AAC 20.350, the ombudsman will, in his discretion, disclose to an agency a confidential record produced by the agency or a confidential record used by the agency in the conduct of its business in order to enable the ombudsman to present a finding,

opinion, or recommendation made to the agency. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.350. ASSERTION OF PRIVACY INTEREST BY AGENCY. If the ombudsman receives written notice from an agency which has provided a confidential record that it asserts a privacy interest in the record, the ombudsman

(1) will, in his discretion, disclose the record only to the person or persons within the agency having custody of the record; and

(2) will, in his discretion, make any other disclosure of the record only in accordance with 21 AAC 20.380. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.360. DISCLOSURE TO THE COMPLAINANT. The ombudsman may not disclose information in a record to the complainant if federal or state law or regulation prohibits disclosure of the record to the complainant. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.370. DISCLOSURE TO GOVERNOR, LEGISLATURE, OR GRAND JURY. If the ombudsman determines that a confidential record produced by an agency should be disclosed under AS 24.55.200 to the governor, the legislature, or a grand jury in order for the ombudsman to seek review of a finding, opinion or recommendation, the ombudsman will, in his discretion, return the record to the agency that produced it and recommend its disclosure by the agency to the governor, the legislature, or the grand jury, as applicable. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.380. PUBLIC DISCLOSURE. (a) The provisions of this section apply to

(1) disclosure of a confidential record to a person within an agency other than the person having custody of a confidential record if that record has been provided to the ombudsman by the agency and the agency has asserted a privacy interest under 21 AAC 20.350; and

(2) public disclosure under AS 24.55.200 of a confidential record produced by an agency.

(b) Before disclosing a confidential record, the ombudsman will give written notice to the agency having custody of the record and to the person about whom information in the record

relates that the ombudsman intends to disclose the record at the expiration of a 15-day period. The period during which the agency or a person may object can be extended by the ombudsman at the request of the agency or person. In providing notice, the ombudsman will indicate the basis of the decision to disclose the record.

(c) The agency or person to whom notice is given under (b) of this section may object to disclosure of the record by filing with the ombudsman a written objection to the disclosure. The objection filed by the agency or person must identify the portion of the record that the agency or person believes should remain confidential and must state the reasons for the objections to disclosure.

(d) If objection to disclosure has not been filed with the ombudsman in accordance with (c) of this section at the end of 15 days from the date of notice, or of any extension of that period approved by the ombudsman, the ombudsman will, in his discretion, disclose the confidential record.

(e) If objection to disclosure is filed with the ombudsman in accordance with (c) of this section and if, despite the objection, the ombudsman believes that disclosure of the record is essential to obtain agency acceptance of a finding and implementation of a recommendation in order to correct an action, decision or omission of the agency that was detrimental to the complainant, the ombudsman will give written notice to the agency or to the person or persons making objection under (c) of this section that he intends to disclose the record. In his notice, the ombudsman will

(1) briefly state the reason or reasons for his decision to disclose;

(2) indicate the date on which the ombudsman expects to make public disclosure of the record, not sooner than 15 days from the date of his notice; and

(3) state that the date may be extended only by mutual agreement between the agency or person and the ombudsman.

(f) At any time before expiration of the date on which the ombudsman indicates that he will dis-

close the document to the public, an agency or a person to whom notice is required to be sent under (e) of this section may apply to the superior court for an order preventing the ombudsman from disclosing the record. In making a determination as to whether the ombudsman may disclose the record

(1) if the record contains both disclosable and confidential information and the confidential information cited by the agency or person objecting to disclosure of the record may be reasonably separated from confidential portions in a manner that will allow meaningful information to be disclosed, the court may determine that the confidential information identified under the authority cited by the agency or person objecting to disclosure of the information or record must be deleted and thereafter may allow the ombudsman to release the disclosable information;

(2) if the record is wholly confidential, or if the record contains both disclosable and confidential information and the confidential information cited by the agency or person objecting to disclosure of the record cannot be reasonably separated from confidential portions in a manner that will allow meaningful information to be disclosed, the court may allow the ombudsman to disclose the record if the court determines that the need for disclosure outweighs the nature and weight of the privacy interest asserted by the agency or person. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090
AS 24.55.160

Art. I, sec. 22, Alaska Constitution

21 AAC 20.390. DEFINITIONS. In 21 AAC 20.300 — 21 AAC 20.390

(1) "confidential" means a record or information in a record that is nondisclosable under a valid federal or Alaska statute or regulation, or by a privilege, exemption, or principle recognized by the courts, or by an agency protective order authorized by law;

(2) "person" has the same meaning as in AS 01.10.060(7);

(3) "record" means a document, paper, memorandum, book, letter, drawing, map, plat, photo, photographic file, motion picture, film,

microfilm, microphotograph, exhibit, magnetic or paper tape, punched card, or other item of any other material, regardless of physical form or characteristic, developed or received under law or in connection with the transaction of official business by an agency or person, and preserved as evidence of the organization, function, policies, decisions, procedures, operations, or other activities of the agency or person or because of the informational value in them; the term also includes staff manuals and instructions to staff that directly or indirectly affect the public. (Eff. 9/16/84, Reg. 91)

Authority: AS 24.55.090

AS 24.55.160

Art. I, sec. 22, Alaska Constitution



State of Alaska
ombudsman

Duncan C. Fowler

April 27, 1990

Pat Pourchot, Senator
Alaska State Senate
Post Office Box V
Juneau, Alaska 99811-3100

RE: Possible Kerttula Amendments to HB 452

Dear Senator Pourchot:

I met with Senator Kerttula yesterday to see what his concerns were about scheduling HB 452 for the floor. He indicated he had considered a couple of amendments but was too busy to deal with them now and would tell Arliss to let the bill go. It was to be scheduled on the floor April 27th.

Since that time he has had second thoughts. He has asked that the bill be held a day so he can offer some amendments. He has not really discussed these with me but I am surmising that they might involve the following:

Minimum Qualifications for Assistant Ombudsman:

The Senator has mentioned on occasion that he wondered what the qualifications of my staff were. I believe it is his perception that assistant ombudsman are, for a large part, untrained and unqualified folk. I have given him a letter in the past describing the backgrounds of several of my staff. I believe his perceptions to be wrong.

The Alaska Ombudsman Act has placed several stiff and strict requirements when the Legislature screens and selects an ombudsman. These were intended to ensure the appointment of a person who is capable, nonpartisan and qualified to fulfill those responsibilities. The Act also gives the appointee wide latitude for structuring and operating the office. This is to ensure the independence of the office and help insulate it from political manipulation. Legislative review is provided in the budgeting and selection process.

The selection and determination of staff qualifications have been delegated to the ombudsman by statute. This is to allow the selection of persons with the background and training the ombudsman feels can best do the job within budgetary constraints. Historically, my predecessors and I have sought qualified staff with an eclectic background. This is because of the wide variety of issues which are presented to this office. Currently I have staff with experience as attorneys, personnel managers, fraud investigators, governmental planning, social work and correctional practitioners and administrators, grant and program managers,

Reply to:

- P.O. Box 102636
Anchorage, AK 99510-2636
(907) 563-3673
(800) 478-2624
- P.O. Box W0
Juneau, AK 99811-3000
(907) 465-4970
(800) 478-4970
- P.O. Box 74356
Fairbanks, AK 99707
(907) 452-4001
(800) 478-3257

municipal government, statistical analysis, investigative reporting, real estate and small business, educators and even an anthropologist.

I believe this broad variety of skills and backgrounds has contributed to the quality of this office's work and our ability to objectively review the diversity of complaints received by the ombudsman.

Currently, minimum qualifications for "Assistant Ombudsman" (investigator) are:

Graduation from an accredited college and three years of a combination of relevant education and employment experience. Acceptable relative experience may include:

- (1) adjustment or investigation of claims such as workers compensation or insurance claims;
- (2) analysis of reports or data for the preparation of surveys, studies or reports;
- (3) hearing officer;
- (4) investigative work for public or private agencies;
- (5) investigative newspaper reporting involving government;
- (6) paralegal or attorney;
- (7) professional experience in administration, management analysis research or planning; or

Substitution: Although a college degree is preferred, that requirement and the work requirement may be satisfied by a high school diploma or equivalent and a demonstrated work history of at least seven (7) years of progressively responsible and relevant work history.

Upon employment staff do undergo several weeks of on the job training. This includes working with trained investigators, completion of suggested reading including our policy and procedure manual, statutes, investigative and research techniques, philosophy and background on the role of an ombudsman. In addition, throughout the year staff are encouraged to take appropriate training classes through universities or other sources as the budget allows. We also have an annual staff training meeting where we can help assure a common knowledge base for the staff.

None of the ombudsman statutes from Nebraska, Iowa or Hawaii have requirements for ombudsman staff set in law. Neither do the three model state laws that I have reviewed suggest setting staff qualifications in law (The Harvard Journal on Legislation, The American Bar Association or Annotated Model Ombudsman Statute by Dr. Walter Gellhorn). In fact there is much to argue against that practice. Dr. Gellhorn states:

Qualifications. The Ombudsman shall be a person well equipped to analyze problems of law, administration, and public policy, and shall not be actively involved in partisan affairs.

COMMENT . . . Requiring any specific experience or absolutely excluding any category of persons . . . seems undesirable.

The same logic for staff would seem to apply as later states in this model statute:

COMMENT. This section gives the ombudsman a free hand in staffing his office, without even the restraints of civil service and classification acts. The highly personal nature of the ombudsman work, . . . justifies giving this leeway to so highly placed and, by hypothesis, responsible an official.

I note that statutory requirements for minimum qualifications do not exist for staff of the Legislative Auditor or Legislative Research.

Subpoena Powers

There is a possibility the senator may have concerns over the ombudsman's ability to issue subpoenas. He may believe that some entity should review the propriety of each subpoena when issued.

Every ombudsman I am aware of in North America has the ability to issue subpoenas. I am not aware that any of them have external committee review or approval of their subpoenas. Ombudsman statutes have been carefully crafted to minimize political manipulation of the office and committee review could raise that as an issue.

Alaska law, like the model laws, provides:

AS 24.55.170 POWERS (a) *Subject to the privileges which witnesses have in the courts of this state, the ombudsman may*

(1) compel by Subpoena . . ." [Emphasis added.]

This provision allows those who think the ombudsman may be exceeding the authority of the office to have the courts quash the subpoena. This is the most appropriate review of the application of the power of subpoena.

Our existing statutory authority and the protections offered the public conform to model acts and are adequate.

Preliminary Review of Investigation.

The Senator may have concerns that those affected by investigations may not have adequate opportunities to review preliminary reports before we issue them.