



Testimony

Before the Subcommittee on Information
Policy, Census, and National Archives,
House Committee on Oversight and
Government Reform

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FEDERAL RECORDS

**Agencies Face Challenges
in Managing E-Mail**

Statement of Linda Koontz, Director
Information Management Issues



G A O

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Highlights of [GAO-08-699T](#), a testimony before the Subcommittee on Information Policy, Census, and National Archives, Committee on Oversight and Government Reform, House of Representatives

Why GAO Did This Study

Federal agencies are increasingly using electronic mail (e-mail) for essential communication. In doing so, they are potentially creating messages that have the status of federal records, which must be managed and preserved in accordance with the Federal Records Act. To carry out the records management responsibilities established in the act, agencies are to follow implementing regulations that include specific requirements for e-mail records.

In view of the importance that e-mail plays in documenting government activities, GAO was asked to testify on issues relating to the preservation of electronic records, including e-mail. As agreed, GAO's statement discusses challenges facing agencies when managing their e-mail records, as well as current policies and practices for managing e-mail messages that qualify as federal records.

This testimony is primarily based on preliminary results of ongoing work, in which GAO is examining, among other things, e-mail policies at four agencies of contrasting sizes and structures (the Department of Homeland Security, the Environmental Protection Agency, the Federal Trade Commission, and the Department of Housing and Urban Development), as well as the practices of selected senior officials.

To view the full product, including the scope and methodology, click on [GAO-08-699T](#). For more information, contact Linda Koontz at (202) 512-6240 or koontzl@gao.gov.

FEDERAL RECORDS

Agencies Face Challenges in Managing E-Mail

GAO's Preliminary Findings

E-mail, because of its nature, presents challenges to records management. First, the information contained in e-mail records is not uniform: it may concern any subject or function and document various types of transactions. As a result, in many cases, decisions on which e-mail messages are records must be made individually. Second, the transmission data associated with an e-mail record—including information about the senders and receivers of messages, the date and time the message was sent, and any attachments to the messages—may be crucial to understanding the context of the record. Third, a given message may be part of an exchange of messages between two or more people within or outside an agency, or even of a string (sometimes branching) of many messages sent and received on a given topic. In such cases, agency staff need to decide which message or messages should be considered records and who is responsible for storing them in a recordkeeping system. Finally, the large number of federal e-mail users and high volume of e-mails increase the management challenge.

Preliminary results of GAO's ongoing review of e-mail records management at four agencies show that not all are meeting the challenges posed by e-mail records. Although the four agencies' e-mail records management policies addressed, with a few exceptions, the regulatory requirements, these requirements were not always met for the senior officials whose e-mail practices were reviewed. Each of the four agencies generally followed a print and file process to preserve e-mail records in paper-based recordkeeping systems, but for about half of the senior officials, e-mail records were not being appropriately identified and preserved in such systems. Instead, e-mail messages were being retained in e-mail systems that lacked recordkeeping capabilities. (Among other things, a recordkeeping system allows related records to be grouped into classifications according to their business purposes.) Unless they have recordkeeping capabilities, e-mail systems may not permit easy and timely retrieval of groupings of related records or individual records. Further, keeping large numbers of record and nonrecord messages in e-mail systems potentially increases the time and effort needed to search for information in response to a business need or an outside inquiry, such as a Freedom of Information Act request. Factors contributing to this practice were the lack of adequate staff support and the volume of e-mail received. In addition, agencies had not ensured that officials and their responsible staff received training in recordkeeping requirements for e-mail. If recordkeeping requirements are not followed, agencies cannot be assured that records, including information essential to protecting the rights of individuals and the federal government, is being adequately identified and preserved.

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to discuss critical issues surrounding the federal government's management of electronic mail messages. As you are aware, federal agencies are increasingly using electronic mail (e-mail) for essential communication, and in doing so, they are potentially creating messages that have the status of federal records. According to the Federal Records Act,¹ federal records are information in whatever form that documents government functions, activities, decisions, and other important transactions, and such records must be managed and preserved in accordance with the act.² As the volume of federal e-mail grows, so does the challenge of managing electronic records.

Under the act, the National Archives and Records Administration (NARA) has responsibilities for oversight and guidance of federal records management, which includes management of e-mail records. Agencies also have records management responsibilities, which as specified by NARA include the responsibility to develop e-mail management policies and practices that include specific requirements, such as defining staff responsibilities for determining whether an e-mail (including any associated attachments) is a federal record and, further, requiring preservation of record e-mail.

As requested, my statement will focus on current practices used in managing e-mail messages that qualify as federal records. After a brief discussion of federal requirements, I will outline some of the challenges facing agencies when managing their e-mail records and then discuss e-mail records management policies and practices that we are reviewing at four agencies. Finally, I will offer brief comments on recently drafted legislation in this area.

In my statement today, my discussion of e-mail records management challenges, policies, and practices is based on the preliminary results of work we are doing at your and the full committee's

¹ 44 U.S.C. chapters 21, 29, 31, and 33.

² The definition of a record is given at 44 U.S.C. 3301.

request, which we expect to publish later this year. For this engagement, we selected four federal agencies based on contrasting sizes and structures and on the significance of their records to protecting rights and documenting accountability: the Department of Homeland Security (DHS), the Environmental Protection Agency (EPA), the Federal Trade Commission (FTC), and the Department of Housing and Urban Development (HUD). For each agency, we are reviewing the e-mail management practices of four senior officials (including the agency head),³ using responses to a series of data collection instruments, interviews with agency officials, and inspection of a limited number of sample e-mail records identified by the agencies to corroborate their statements. Also, to develop comments on the legislation, we analyzed the provisions of the bill related to our ongoing work.

The ongoing performance audit on which my comments today are based, which began in April 2007, is being conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results in Brief

E-mail, because of its nature, presents challenges to records management. First, the information contained in e-mail records is not uniform: it may concern any subject or function and document various types of transactions. As a result, in many cases, decisions on which e-mail messages are records must be made individually. Second, the transmission data associated with an e-mail record—including information about the senders and receivers of messages, the date and time the message was sent, and any attachments to the messages—may be crucial to understanding the context of the

³ According to agency officials, the head of DHS did not have an e-mail account or use e-mail for agency business; accordingly, we reviewed the practices of 15 senior officials.

record. Third, a given message may be part of an exchange of messages between two or more people within or outside an agency, or even of a string (sometimes branching) of many messages sent and received on a given topic. In such cases, agency staff need to decide which message or messages should be considered records and who is responsible for storing them in a recordkeeping system. Finally, the large number of federal e-mail users and high volume of e-mails increase the management challenge. According to NARA, the use of e-mail results in more records being created than in the past, as it often replaces phone conversations and face-to-face meetings that might not have been otherwise recorded.

Our ongoing review of e-mail records management at four agencies provides illustrations of these difficulties. In their e-mail records management policies, the four agencies addressed, with a few exceptions, the requirements that we identified in NARA's regulations. However, for the senior officials whose practices we reviewed, recordkeeping requirements for e-mail were not always met. Each of the four agencies generally followed a print and file process to preserve e-mail records in paper-based recordkeeping systems, but for about half of the senior officials, e-mail records were not being appropriately identified and preserved in such systems. Instead, e-mail messages, including records, were generally being retained in e-mail systems that lacked recordkeeping capabilities, which is contrary to regulation. (Among other things, a recordkeeping system allows related records to be grouped into classifications according to their business purposes.) Unless they have recordkeeping features, e-mail systems may not permit easy and timely retrieval of both groupings of related records as well as individual records. Further, keeping large numbers of record and nonrecord messages in e-mail systems potentially increases the time and effort needed to search for information in response to a business need or an outside inquiry, such as a Freedom of Information Act request. Factors contributing to this practice were the lack of adequate staff support and the volume of e-mail received. In addition, officials and their responsible staff had not always received training in the recordkeeping requirements for e-mail records. If recordkeeping requirements are not followed, agencies cannot be assured that records, including information that is

essential to protecting the rights of individuals and the federal government, is being adequately identified and preserved.

The provisions of a draft bill (the Electronic Communications Preservation Act) would mandate the transition to electronic records management for e-mail records. Such a transition could help agencies improve their recordkeeping practices in this area. As our review shows, agencies recognize that devoting significant resources to creating paper records from electronic sources is not a viable long-term strategy and have accordingly begun to plan or implement such a transition. The investment in information technology needed to implement electronic recordkeeping will have to be managed appropriately to avoid unnecessary cost and performance risks. Accordingly, the bill's requirement that NARA develop minimum functional requirements should reduce the development risk that could result from multiple agencies concurrently developing similar systems. Once implemented, however, electronic recordkeeping systems could potentially help agencies obtain the efficiencies of automation and avoid expenditure of resources on duplicative manual processes and storage.

Background

Advances in information technology and the explosion in computer interconnectivity have had far-reaching effects, including the transformation from a paper-based to an electronic business environment and the capability for rapid communication through e-mail. Although these developments have led to improvements in speed and productivity, they also require the development of ways to manage information that is increasingly in electronic rather than paper form. For federal agencies, such information includes e-mail messages that may have the status of federal records.

NARA and Federal Agencies Have Responsibilities for Federal Records Management

Under the Federal Records Act,⁴ each federal agency is required to make and preserve records that (1) document the organization, functions, policies, decisions, procedures, and essential transactions of the agency and (2) provide the information necessary to protect the legal and financial rights of the government and of persons directly affected by the agency's activities.⁵ These records, which include e-mail records, must be effectively managed. If they are not, individuals might lose access to benefits for which they are entitled, the government could be exposed to unwarranted legal liabilities, and historical records of vital interest could be lost forever. In addition, agencies with poorly managed records risk increased costs when attempting to search their records in response to Freedom of Information Act requests or litigation-related discovery actions.

Accordingly, agencies are required to develop records management programs to ensure that they have appropriate recordkeeping systems with which to manage and preserve their records. Among the activities of a records management program are identifying records and sources of records and providing records management guidance, including agency-specific recordkeeping practices that establish what records need to be created in order to conduct agency business. Agencies are also required to *schedule* their records: that is, to identify and inventory records, appraise their value, determine whether they are temporary or permanent, and determine how long the temporary records should be kept.

The act also gives the National Archives and Records Administration (NARA) responsibilities for oversight and guidance of federal records management, which includes management of e-mail records. NARA works with agencies to schedule records, and it must approve all records schedules. Records schedules may be specific to an agency, or they may be general, covering records common to several or all agencies. According to NARA, records covered by general records schedules make up about a third of all

⁴ 44 U.S.C. chapters 21, 29, 31, and 33.

⁵ 44 U.S.C. 3101.

federal records. For the other two thirds, NARA and the agencies must agree upon specific records schedules.

No record may be destroyed unless it has been scheduled. For temporary records, the schedule is of critical importance, because it provides the authority to dispose of the record after a specified time period. (For example, General Records Schedule 1, Civilian Personnel Records, provides instructions on retaining case files for merit promotions;⁶ agencies may destroy these records 2 years after the personnel action is completed, or after an audit by the Office of Personnel Management, whichever is sooner.) Once a schedule has been approved, the agency must issue it as a management directive, train employees in its use, and apply its provisions to temporary and permanent records.

NARA has issued regulations that specifically address the management of e-mail records.⁷ As with other records, agencies are required to establish policies and procedures that provide for appropriate retention and disposition of e-mail records. NARA further specified that for each e-mail record, agencies must preserve certain transmission data—names of sender and addressees and message date. Further, except for a limited category of “transitory” e-mail records,⁸ agencies are not permitted to store the recordkeeping copy of e-mail records in the e-mail system, unless that system has certain features, such as the ability to group records into classifications according to their business purposes and to permit easy and timely retrieval of both individual records and groupings of related records. These recordkeeping features are important to ensure that e-mail records remain both accessible and

⁶ That is, records relating to the promotion of an individual that document qualification standards, evaluation methods, selection procedures, and evaluations of candidates.

⁷ 36 CFR Part 1234.24.

⁸ These are e-mail records with very short-term (180 days or less) NARA-approved retention periods (under the authority of General Record Schedule 23, Item 7, or a NARA-approved agency records schedule). Agencies may elect to manage such records on the e-mail system itself, without the need to copy the record to a recordkeeping system, provided that (1) users do not delete the messages before the expiration of the NARA-approved retention period, and (2) the system's automatic deletion rules ensure preservation of the records until the expiration of the NARA-approved retention period.

usable during their useful lives. For example, it is essential to be able to classify records according to their business purpose so that they can be retrieved in case of mission need. Further, if records cannot be retrieved easily and quickly, or they are not retained in a usable format, they do not serve the mission or historical purpose that led to their being preserved. If agencies do not keep their e-mail records in systems with the required capabilities, records may also be at increased risk of loss from inadvertent or automatic deletion.

If agency e-mail systems do not have the required recordkeeping features, either agencies must copy e-mail records to a separate electronic recordkeeping system, or they must print e-mail messages (including associated transmission information that is needed for purposes of context) and file the copies in traditional paper recordkeeping files. NARA's regulations allow agencies to use either paper or electronic recordkeeping systems for record copies of e-mail messages, depending on the agencies' business needs.

The advantages of using a paper-based system for record copies of e-mails are that it takes advantage of the recordkeeping system already in place for the agency's paper files and requires little or no technological investment. The disadvantages are that a paper-based approach depends on manual processes and requires electronic material to be converted to paper, potentially losing some features of the electronic original; such manual processes may be especially burdensome if the volume of e-mail records is large.

The advantage of using an electronic recordkeeping system, besides avoiding the need to manage paper, is that it can be designed to capture certain required data (such as transmission data) automatically. Electronic recordkeeping systems also make searches for records on particular topics much more efficient. In addition, electronic systems that are integrated with other applications may have features that make it easier for the user to identify records, and potentially could provide automatic or partially automatic

classification functions.⁹ However, as with other information technology investments, acquiring an electronic recordkeeping system requires careful planning and analysis of agency requirements and business processes; in addition, electronic recordkeeping raises the issue of maintaining electronic information in an accessible form throughout its useful life.¹⁰

Management of E-Mail Records Poses Challenges

Because of its nature, e-mail can present particular challenges to records management. First, the information contained in e-mail records is not uniform: it may concern any subject or function and document various types of transactions. As a result, in many cases, decisions on which e-mail messages are records must be made individually. Second, the transmission data associated with an e-mail record—including information about the senders and receivers of messages, the date and time the message was sent, and any attachments to the messages—may be crucial to understanding the context of the record. Third, a given message may be part of an exchange of messages between two or more people within or outside an agency, or even of a string (sometimes branching) of many messages sent and received on a given topic. In such cases, agency staff need to decide which message or messages should be considered records and who is responsible for storing them in a recordkeeping system. Finally, the large number of federal e-mail users and high volume of e-mails increase the management challenge. According to NARA, the use of e-mail results in more records being created than in the past, as it often replaces phone conversations and face-to-face meetings that might not have been otherwise recorded.

⁹ According to Gartner Research, “What enterprises really need (and want), is a mechanism that automatically classifies messages by records management type ... without user intervention.” However, such technology is “in its infancy,” as of August 2007, although the company expected it to mature rapidly because of high demand. Gartner Research, *Best Practices in Records Management: FAQs*, G00149526 (Aug. 17, 2007).

¹⁰ That is, if the hardware, software, or media required to access the information become obsolete or deteriorate, the information must be migrated to hardware, software, or media that continue to be accessible.

These challenges have been recognized by NARA and the records management community in numerous studies and articles.¹¹ A 2001 survey of federal recordkeeping practices conducted by a contractor for NARA concluded, among other things, that managing e-mail was a major records management problem and that the quality of recordkeeping varied considerably across agencies.¹² In addition, the study concluded that for many federal employees, the concept of a “record” and what should be scheduled and preserved was not clear.

A 2005 NARA-sponsored survey of federal agencies’ policy and practices for electronic records management concluded that procedures for managing e-mail were underdeveloped.¹³ The study, performed by the University of Maryland Center for Information Policy, stated that most of the surveyed offices had not developed electronic recordkeeping systems, but were instead maintaining recordkeeping copies of e-mail and other electronic documents in paper format. However, all of the offices also maintained electronic records (frequently electronic duplicates of paper records). According to the study team, the agencies did not establish electronic recordkeeping systems due to financial constraints, and implementing such systems was a considerable challenge that increased with the size of the agency. As a result, organizations were maintaining unsynchronized parallel paper and electronic systems, resulting in extra work, confusion regarding which is the recordkeeping copy, and retention of many records beyond their disposition date.

¹¹ For example, Robert F. Williams and Lori J. Ashley, Cohasset Associates Inc., *2005 Electronic Records Management Survey—A Renewed Call to Action*, Cohasset/ARMA/AIIM White Paper (2005) Giovanna Patterson and J. Timothy Sprehe, “Principal Challenges Facing Electronic Records Management in Federal Agencies Today,” *Government Information Quarterly*, Vol. 19, (2002), pp 307–315; available at www.sciencedirect.com.

¹² SRA International, Inc., *Report on Current Recordkeeping Practices within the Federal Government*, a report sponsored by NARA (Dec. 10, 2001), www.archives.gov/records-mgmt/pdf/report-on-recordkeeping-practices.pdf.

¹³ Center for Information Policy/College of Information Studies/University of Maryland, *Best Practices in Electronic Records Management: A Survey and Report on Federal Government Agency’s Recordkeeping Policies and Practices*, a report sponsored by NARA (Dec. 19, 2005), www.archives.gov/records-mgmt/initiatives/umd-survey.html.

Most recently, a NARA study team examined in 2007 the experiences of five federal agencies (including itself) with electronic records management applications, with a particular emphasis on how these organizations used these applications to manage e-mail.¹⁴ The purpose of the study was to gather information on the strategies that organizations are using that may be useful to others. Among the major conclusions from the survey was that implementing an electronic records management application requires considerable effort in planning, testing, and implementation, and that although the functionality of the software product itself is important, other factors are also crucial, including agency culture, training provided, and management and information technology support. With regard to e-mail in particular, the survey concluded that e-mail messages can constitute the most voluminous type of record that is filed into records management applications.

Agency Policies on Preserving E-Mail Records Are Not Followed Consistently

Our work on e-mail records management demonstrates that agencies continue to face challenges similar to those identified by the prior studies. While our results are preliminary and we are not able to project them beyond the agencies we reviewed, I believe they help illustrate the difficulties agencies can face when applying NARA's requirements to today's operating environment.

Most Agency Policies Generally Complied with NARA Guidance

Three of the four agencies we reviewed—FTC, DHS, and EPA—had policies in place that generally complied with NARA's guidance on how to identify and preserve e-mail records, but each was missing one applicable requirement. Specifically, the policies at EPA and FTC did not instruct staff on the management and preservation of e-mail records sent or received from nongovernmental e-mail systems (such as commercial Web-based systems). Both EPA and FTC

¹⁴ NARA, *A Survey of Federal Agency Records Management Applications 2007* (Jan. 22, 2008), www.archives.gov/records-mgmt/resources/rma-study-07.pdf.

officials told us that these instructions were not provided because the staff were informed that use of outside e-mail systems for official business was prohibited. However, whenever access to such external systems is available at an agency, providing these instructions is still required. DHS's policy did not specify that draft documents circulated via e-mail may be federal records. DHS officials recognized that their policies did not specifically address the need to assess the records status of draft documents, and said they planned to address the omission during an ongoing effort to revise the policies.

The policy at one of the four agencies, HUD, was missing three of eight applicable requirements.¹⁵ One element of the policy was inconsistent with NARA's regulation: it required only the sender of an e-mail message to review it for potential records status, but the regulation states that e-mail records could include both messages sent or received. HUD officials acknowledged that its policy omits the recipient's responsibility for determining the record status of e-mail messages and stated that its e-mail policy fell short of fully implementing NARA regulations in this regard because the department's practice is not to use e-mail for business matters in which official records would need to be created. However, this practice does not remove the requirement for agency employees to assess e-mail received for its record status, because the agency cannot know that employees will not receive e-mail with record status; the determination of record status depends on the content of the information, not its medium.

In addition, two other requirements were missing from HUD's policy: it did not state, as required, that recordkeeping copies of e-mail should not be stored in e-mail systems and that backup tapes should not be used for recordkeeping purposes. HUD officials stated that they considered that these requirements were met by a reference in their policy to the NARA regulations in which these

¹⁵ The requirement to instruct staff on the management and preservation of official messages sent or received in non-governmental e-mail systems was not applicable at HUD, which has implemented technical controls to prevent access to such e-mail systems.

requirements appear.¹⁶ However, this reference is not sufficient to make clear to staff that e-mail systems and backup tapes are not to be used for recordkeeping.

E-Mail Records of Senior Officials Were Not Consistently Preserved

While agency policies were generally compliant with recordkeeping regulations, these policies were not applied consistently. Specifically, for 8 of the 15 senior officials we reviewed, e-mail messages that qualified as records were not being appropriately identified and preserved. Instead, the officials generally kept every message within their e-mail systems. Each of the four agencies generally followed a print and file process to preserve e-mail records in paper-based recordkeeping systems because their e-mail systems did not have required record-keeping capabilities. Factors contributing to this lack of compliance with recordkeeping requirements were the lack of adequate staff support and the volume of e-mail received—several of these officials had thousands or even tens of thousands of messages in their e-mail system accounts. Another reason was that keeping every e-mail ensured that no information was lost, which was seen as safe from a legal standpoint. However, by keeping every message, they were potentially increasing the time and effort that would be needed to search through and review all the saved messages in response to an outside inquiry, such as a Freedom of Information Act request. In addition, by not keeping the e-mail in an appropriate recordkeeping system, these officials were making it more difficult for their agencies to find information by subject. Appropriately identifying and saving record material also allows agencies to avoid expending resources on unnecessarily preserving nonrecord material and on keeping record material beyond its usefulness (that is, beyond the date when it can be disposed of according to the records schedule).

In contrast, many of the officials whose e-mail records were appropriately managed delegated responsibility for this task to one

¹⁶ Under Electronic Mail Database Management, Record Retention Responsibilities, the HUD Electronic Mail Policy states that “Records created or received on electronic mail systems must be managed in accordance with the provisions of 36 CFR 1220, 1222, and 1228.”

or more administrative staff members. These individuals were responsible for identifying which e-mail messages qualified as records and ensuring that the message and any attachments were preserved according to the agency's records management policies. Generally, this required that they print the message, including any attachments and transmission information (who the message was to and from and when it was sent), and place the paper copy in a file.

Printing and filing copies of e-mail records is acceptable under NARA's regulations. However, printing copies of e-mails can lead to an agency maintaining multiple copies of the message in both paper and electronic formats, which can lead to agencies' expending resources on duplicative storage, as well as confusion over which is the recordkeeping copy. Further, as with all electronic documents, conversion to paper entails the risk of losing some features of the electronic original.

Awareness of federal records requirements is also an ongoing concern. At one department, training for senior officials on their records management responsibilities took place only at the beginning of the current administration. Officials who joined the department subsequently were not trained on records management. Similarly, several administrative staff responsible for managing the e-mail of senior officials told us that they had not been trained to recognize a record.

Recently Proposed Legislation on Electronic Records Management

A draft bill, the Electronic Communications Preservation Act, would mandate agencies to transition to electronic records management by requiring the Archivist of the United States to promulgate regulations governing agency preservation of electronic communications that are federal records. Among other things, the regulations would

- require the electronic capture, management, and preservation of these records;
- require that such electronic records are readily accessible for retrieval through electronic searches; and

-
- require the Archivist to develop mandatory minimum functional requirements for electronic records management applications to meet the first two requirements.

The legislation would also require agencies to comply with the new regulations within 4 years of enactment.

Requiring a governmentwide transition to electronic recordkeeping systems could help federal agencies improve e-mail management. For example, storing e-mail records in an electronic repository could make them easier to search and potentially speed agency responses to Freedom of Information Act requests. As our review shows, agencies recognize that devoting significant resources to creating paper records from electronic sources is not a viable long-term strategy and have accordingly begun to plan or implement such a system. The 4-year deadline in the draft bill could help expedite this transition.

In addition, the development of minimum functional requirements by NARA should reduce the development risk that could have resulted from multiple agencies concurrently developing similar systems. By providing time both for standards to be developed and implemented by agencies, these provisions recognize the need for a well-planned process. Like any investment in information technology, the development of electronic recordkeeping systems will have to be carefully managed to avoid unnecessary cost and performance risks. However, once implemented, such systems could potentially provide the efficiencies of automation and avoid the expenditure of resources on duplicative manual processes and storage.

In summary, the increasing use of e-mail is resulting in records management challenges for federal agencies. For example, the large number of federal e-mail users and the high volume of e-mails present challenges, particularly in the current paper-based environment. While agency e-mail policies generally contained required elements, about half of the senior officials we reviewed were not following these policies and were instead maintaining their e-mail messages within their e-mail accounts, where records cannot

be efficiently searched, are not accessible to others who might need the information in the records, and are at increased risk of loss. Several agencies are considering developing electronic recordkeeping systems, but until such systems are implemented, agencies may have reduced assurance that information that is essential to protecting the rights of individuals and the federal government is being adequately identified and preserved.

Mr. Chairman, this concludes my testimony today. I would be happy to answer any questions you or other members of the subcommittee may have.

Contacts and Acknowledgements

If you have any questions concerning this testimony, please contact Linda Koontz, Director, Information Management Issues, at (202) 512-6240, or koontzl@gao.gov. Other individuals who made key contributions to this testimony were Timothy Case, Barbara Collier, Jennifer Stavros-Turner, and James Sweetman.

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