



FAQ SERIES #2

RETENTION OF ELECTRONIC RECORDS AS OFFICIAL COPIES

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INTRODUCTION

Most recorded information originates in electronic form, and many paper records are scanned for storage and retrieval as digital images. Printing electronic records to produce paper copies for retention was a common practice in the twentieth century, but it is no longer a workable retention strategy. For economy and practicality, many organizations want to satisfy retention requirements with electronic records rather than paper documents.

This report is intended for records managers, information governance specialists, compliance officers, risk managers, legal counsel, information technology specialists, and others who are responsible for formulating, advising about, reviewing, approving, or implementing, or enforcing retention guidance for electronic records. The following sections provide answers to frequently asked questions about the legal and operational acceptability of electronic records as substitutes for paper documents to satisfy retention requirements. This is an important and much discussed records management topic. The answers presented here apply to retention policies and practices in companies, government agencies, schools and colleges, healthcare organizations, cultural institutions, philanthropic entities, and other organizations.

1. What is an official copy?

An official copy is the copy of a record that will satisfy an organization's retention requirements based on legal, operational, and historical considerations. The official copy is kept for the period of time specified in the organization's record retention schedule. Where an organization has only one copy of a document, database, email message, or other record, that copy is—by definition—the official copy. Where the same record exists in multiple copies, one of the copies is designated the official copy to be retained for the indicated time period. The other copies are considered duplicate records for retention purposes. Those copies do not need to be kept.

2. What are the economic advantages of retaining electronic records as official copies?

Digital documents, email messages, CAD-generated drawings, digital photographs, and other electronic records are much less expensive to retain than their non-electronic counterparts. This advantage is easily demonstrated:

- In the United States, the typical base rent in a Class A building, the most desirable office space in a given locality, ranges from \$25 to \$35 per square foot per year with some urban and suburban locations costing more than those amounts. The total cost of occupancy—including renovations and repairs, insurance, utilities, janitorial services, grounds maintenance, and property management fees—can be two or

three times the base rent for a given building. By that measure, the true annual cost of office space in a Class A building in typical U.S. locations is \$50 to \$100 per square foot.

- A four-drawer letter-size filing cabinet can store about 12,000 pages of paper records. It occupies about nine square feet of office space, including space required for extended drawers and working room in front of the cabinet. When the total cost of occupancy is considered, the annual cost to retain 12,000 pages of paper documents in nine square feet of office space in a Class A building is \$450 to \$900.
- Stored as digital images in a compressed format, 12,000 letter-size pages will require less than 1.2 gigabytes of storage. Word processing documents, spreadsheets, email messages, and other documents that originate in digital form require less storage space. With cloud-based services charging three to five cents per month for one gigabyte of storage, 12,000 pages—the contents of one filing cabinet—can be retained electronically for less than 75 cents per year.
- Electronic retention also compares favorably with offsite storage, the most cost-effective retention method for inactive paper records. 12,000 pages of paper records can be packed in 10 cubic-foot boxes. Based on typical rates charged by commercial storage providers, the annual storage cost for 10 boxes will be \$15 to \$25 per year, not including one-time charges for pickup and data entry.

These cost comparisons are only valid for electronic records that originate in digital form or that were digitized by scanning paper documents to support frequent retrieval, transaction processing, or other operations as part of a defined workflow or other business process during the active phase of the record life cycle. Offsite storage is always less expensive than scanning inactive paper records specifically for retention.

Cost aside, some records can only be retained electronically. Databases, for example, cannot be printed without a significant loss of functionality. Other electronic records, such as audio and video recordings, cannot be printed at all.

3. Do different retention criteria apply to electronic and non-electronic records as official copies?

No. Retention decisions are based on the content and purpose of specific records. The format of a record is irrelevant when determining how long a given record must be kept. Decision-making criteria are the same for electronic and non-electronic records. Retention periods are determined by legal, operational, and scholarly (research) criteria:

- Legal criteria are defined by laws, regulations, or other legal instruments that mandate the retention of certain records for specific periods of time. These retention requirements apply to records in any format unless a particular format is

prescribed. A broader group of legal considerations is concerned with the retention of records for use as evidence in litigation and other legal proceedings. These considerations are typically addressed by basing retention periods on statutes of limitations for legal actions for which specific records may be relevant regardless of the format of the records.

- Operational criteria are concerned with the availability of records for long-term administrative consistency and continuity, as well as for the day-to-day completion of individual activities, transactions, and tasks. These considerations apply equally to electronic and non-electronic records.
- Records maintained by companies, government agencies, not-for-profit organizations, and other entities may contain information of interest to historians, political scientists, sociologists, economists, demographers, or other scholars. Some records are also of interest to genealogists, private investigators, market trends analysts, and others who are not necessarily scholars but are nonetheless involved in research. Scholarly value is not affected by the format of records.

4. Are electronic records legally acceptable as official copies?

Many laws and regulations permit the retention of records in electronic form. Some of these laws have been in effect for more than a decade. For example:

- According to 15 US Code 7001(d)(3), electronic records can satisfy statutes and regulations that require the retention of a contract or other record “in its original form.” Section 12 of the Uniform Electronic Transaction Act (UETA)—which has been adopted by 47 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands—contains virtually identical provisions. (The non-adopting states have their own statutes pertaining to electronic transactions.) Section 13 of the UETA provides that “evidence of a record or signature may not be excluded solely because it is in electronic form.” Many sections of the Code of Federal Regulations and various state codes have been revised to accept electronic records to satisfy recordkeeping requirements.
- In Canada, the Personal Information Protection and Electronic Documents Act (2000, c. 5) specifies that electronic documents can satisfy regulatory retention requirements if “the information in the electronic document will be readable” and “any information that identifies the origin and destination of the electronic document and the date and time when it was sent or received is also retained.” Canadian provinces and territories, with the exception of the Northwest Territories, have adopted the Uniform Electronic Commerce Act, which establishes functional equivalency rules that allow electronic records to satisfy legal requirements for written communications and recordkeeping.

- Many other countries have electronic transaction laws or electronic signature laws that affirm the legal status of electronic records. These laws, which describe electronic records as electronic documents or data messages, draw upon model laws developed by the United Nations Commission on International Trade Law (UNCITRAL). They accept electronic records as official copies to satisfy retention requirements subject to certain conditions, the most common being that the electronic records must accurately preserve all content, the records must remain readable throughout their retention periods, and printed copies must be provided when requested by government officials. Computer equipment and software to support retrieval, display, and printing of electronic records must be available for as long as the records are retained.

5. Are there situations in which electronic records are not acceptable as official copies?

Electronic transaction laws apply to transactions associated with business and government operations. They do not address the legal status of electronic records that deal with non-commercial or non-governmental matters, including such personal matters as powers of attorney, healthcare proxies, do-not-resuscitate orders, and non-commercial trusts. In the United States, the Uniform Electronic Transactions Act specifically excludes wills or other testamentary instruments, records associated with certain transactions covered by the Uniform Commercial Code, and any records that are required by other laws or regulations to be in non-electronic form.

In some states, electronic transactions and electronic signature laws exclude records related to adoptions, divorce, or family; pleadings, motions, and other official court documents; insurance cancellation notices; default notices associated with credit agreements; foreclosure and eviction notices; documents that require notarization; and records related to transportation or handling of hazardous substances. The laws of other countries have similar exclusions. For most organizations, these exclusions will affect few, if any, electronic records.

6. Are electronic records suitable for official copies with long retention requirements?

Yes, but significant issues and concerns must be addressed. Electronic transaction acts and other laws and regulations specify that electronic records must remain readable throughout their retention periods. Continued readability is affected by the interdependence of media, recorded information, equipment, and software:

- The life span of a given electronic storage medium—the period of time during which a given medium will remain reliably readable—may be shorter than the retention period for the information that the medium contains. In the case of hard drives, the

most widely used computer storage technology, the life span of recorded information is defined by the service life of a given device, which is subject to significant wear and tear over time. Few hard drives are engineered for a service life longer than 10 years, and most devices will be replaced by newer equipment before that time period elapses.

- With removable electronic media, such as magnetic tapes and optical disks, the life span may be affected by physical damage to or chemical deterioration of the medium itself or by the unavailability of compatible reading equipment. While magnetic and optical recording media may remain physically and chemically stable for several decades, the device required to read a specific magnetic tape or optical disk may be taken out of service without a compatible replacement or discontinued by its manufacturer without a compatible successor. The history of electronic storage products indicates a reasonably high likelihood that this will occur within a 10-year time period.
- These complications are compounded by software-related dependencies. Electronic records are intended for retrieval or other processing by specific application programs that, in turn, operate in a specific systems software environment. Even more than electronic storage devices, computer software is subject to changes that can render previously recorded information unusable. Successor versions of a given program may not be able to read digital documents, data, photographs, or other electronic information recorded by earlier versions. While some backward-compatibility is typically supported in new versions, it does not necessarily apply to all prior generations of a program.

Electronic records are generally suitable for official copies that will be retained for 10 years or less. These records can be saved with reasonable assurance that they will remain readable until their retention periods elapse. Additional action is required to ensure the continued readability of electronic records with longer retention periods.

7. What action can be taken to maintain long-term readability of electronic records?

To address long-term retention requirements, electronic records can be converted to new file formats and/or new storage media. This conversion, which is termed “data migration,” must be performed at predetermined intervals or when circumstances warrant.

Migration of electronic records to new file formats will maintain the readability of digital documents, databases, and other information when computer systems or software are upgraded or replaced. Migration of electronic records to new storage media will maintain the readability of recorded information where the stable life span of a given storage medium is shorter than the retention period for information that the medium contains or where product modifications or discontinuations render a given storage medium unusable.

Data migration requirements should be considered when retention periods are determined for electronic records intended as official copies. The longer the retention period, the greater the need for data migration to maintain the future readability of electronic records. A data migration plan is required when the total retention period for electronic records is 10 years or longer. In general, continued readability is not a problem for electronic records that will be retained for 10 years or less, but other factors must be taken into account. Data migration should be anticipated, for example, when the destruction date for electronic records is greater than five years from the initial implementation date of the computer system or software that maintains the records. Computer storage devices and software are likely to be replaced or significantly upgraded after that time, in which case the readability of electronic records may be affected. Data migration requirements should be incorporated into the planning process for system upgrades or replacement.

8. What provisions and work steps must be included in a data migration plan?

At a minimum, a data migration plan to maintain the readability of electronic records must:

- Define roles and responsibilities for organizational units or other stakeholders that will be involved in the data migration process.
- Identify the electronic records to be migrated.
- Identify electronic records, if any, to be excluded from data migration.
- Specify anticipated migration intervals for conversion of electronic records to new file formats.
- Specify anticipated migration intervals for copying electronic records onto new storage media.
- Specify functional requirements for file formats and storage media to be used in the data migration process.
- Specify functional requirements for technology components, data migration tools, data migration services, security mechanisms, or other resources to be deployed, developed, or acquired.
- Provide a method for testing and verification to ensure that data migration was performed accurately and reliably without loss of information.
- Specify compliance requirements for laws or regulations that may affect data migration.
- Ensure retention of the original electronic records until complete, accurate data migration is confirmed.

9. What are the alternatives to data migration?

Data migration is a burdensome and costly requirement that has no counterpart in non-electronic recordkeeping systems. Given the relatively recent practice of retaining

electronic records as official copies, most organizations have limited experience with satisfying data migration requirements, and they have not fully considered the implications of a multi-decade data migration process. Where electronic records must be retained for long periods of time, periodic data migration will involve a future commitment of labor and economic resources of uncertain availability. Where electronic records are designated for permanent retention, the commitment is perpetual. In many organizations, it is not clear whether and to what extent this commitment will be fulfilled.

Subject to significant limitations and trade-offs, the following alternatives can minimize or eliminate data migration requirements in certain situations:

- Official copies can be saved in a file format that supports long-term retention of electronic records. This approach will lengthen the period of time between migration intervals, thereby minimizing but not eliminating data migration requirements. The best known example of a preservation-oriented file format is PDF/Archival (PDF/A), a standardized subset of the Portable Document Format that is intentionally designed to avoid software dependencies and maintain the readability of digital documents over time. PDF/A is compatible with many computer platforms, has wide support in the digital preservation community, and is likely to remain in use for the foreseeable future. Various products are available to convert digital documents to PDF/A files individually or in batches. Markup languages, such as XML and HTML, are sometimes cited as alternatives to PDF/A. As a significant limitation, these preservation-oriented file formats are principally intended for word processing files, spreadsheets, email messages, CAD-generated drawings, and other digital documents. They are not suitable for databases, audio recordings, and video recordings.
- Legacy storage devices and software can be kept in service following their replacement by newer hardware or software, but this is—at best—a short-term solution that will extend the readability of electronic records for a few additional years. Generally, this approach should be limited to electronic records that are subject to occasional retrieval and that will be eligible for destruction within 3 to 5 years, assuming that the superseded hardware or software components can be kept in service for that entire time period.
- Where the same information exists in electronic and non-electronic formats, or where information can be converted easily and reliably to non-electronic formats through printing or transcription, an organization can utilize paper or microfilm for information designated for long-term retention. In most cases, the useful life of paper records and microfilm equals or exceeds the retention periods for information that the records contain. This approach minimizes the risk that required information will become unreadable in the future, but it will involve added expense for storing non-electronic records. For records that originate in electronic form, printing and filing of paper copies for retention can be more burdensome than data migration.

- Retention periods for non-permanent electronic records should be reduced to the minimum amount of time compatible with legal and operational requirements. Like their paper counterparts, electronic records may be retained for long periods of time because the interested parties could not agree on a shorter retention period, but the greater the quantity of electronic records an organization has, the more burdensome the migration process and the higher the cost.
- Electronic records with elapsed retention periods should be discarded at the earliest opportunity to eliminate them from the data migration process.
- Data migration is intended for electronic records that will be retained as official copies. Duplicate copies, drafts, digital documents and email messages with inconsequential content, and any other electronic records not identified as official copies should be discarded when no longer needed to eliminate them from the data migration process.

10. Are products or services available to manage the retention of electronic records as official copies?

Yes. Software intended for lifecycle management of electronic records is available for in-house installation or as cloud-based service offerings. The most important product categories are records management application (RMA) software and email archiving systems.

RMA software creates and maintains a searchable repository of electronic records that are transferred from their originating applications. Unlike content management applications, which deal with active electronic records that may be updated, edited, superseded, or otherwise changed, RMA software is designed to manage electronic records that are no longer subject to modification. Electronic records transferred to an RMA-managed repository are considered the final versions for retention purposes. If revised versions are added, they are treated as unique records rather than as replacements for older versions.

RMA software ensures the integrity of electronic records by providing effective safeguards against their accidental or unauthorized destruction. When electronic records enter an RMA-managed repository, they are “locked down”—that is, they cannot be edited or replaced, and they cannot be deleted until their designated retention periods elapse and all necessary approvals have been obtained. Retention periods may be based on elapsed time from a specified cutoff date, such as the end of the calendar year, or elapsed time following a specified event, such as fulfillment or cancelation of a contract, termination of a project, closing of a case, completion of an audit, or termination of employment.

RMA software will also place retention holds on electronic records that are identified as relevant for litigation, government investigations, audits, or other purposes. The software

will suspend destruction or extend the retention periods for such records until the purposes for which the holds were placed are fully resolved and the holds are released by authorized persons.

RMA software supports retention of a wide range of electronic records, including word processing documents, spreadsheets, presentations, digital images, CAD-generated drawings, video recordings, and audio recordings. RMA software can also manage the retention of email messages, but email archiving systems are specifically intended for that purpose. An email archiving system creates and maintains a repository of messages and attachments, which may be transferred automatically and transparently from an email server at predetermined intervals or when a given mailbox's capacity exceeds a specified level. Manual archiving of email by mailbox owners is also possible. Alternatively, an email archiving system may capture messages and attachments in real-time as they are sent to or received from designated mailboxes. Regardless of input method, messages and attachments will remain in the archival repository until their designated retention periods elapse. Legal holds will prevent destruction of messages and attachments that are needed for litigation, government investigations, or other purposes.

ABOUT THE AUTHOR

William Saffady is a records and information management consultant and researcher based in New York City. He is the author of over three-dozen books and many articles on records management, record retention, information governance, document storage and retrieval technologies, and other information management topics. He recently completed the third edition of *Records and Information Management: Fundamentals of Professional Practice*, the most widely used textbook on records management. Other recent books include *Legal Requirements for Electronic Records Retention in Western Europe* and *Legal Requirements for Electronic Records Retention in Eastern Europe*, both published by ARMA International in 2014; *Legal Requirements for Electronic Records Retention in Asia*, which was published by ARMA International in 2015; *Email Retention and Archiving: Issues and Guidance for Compliance and Discovery*, which was published by ARMA International in 2013; and *Cost Analysis Concepts and Methods for Records Management Projects, Second Edition*, which was published by ARMA International in 2011.

Since 1976, Dr. Saffady has served as an information management consultant, providing analytical services and training, to companies, government agencies, not-for-profit entities, cultural institutions, and other organizations. These projects have involved the development of strategic plans and governance models for records management programs, needs assessments and gap analysis, the development of record retention policies and schedules, and the preparation of technical specifications for procurement of records management products and services.

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