



Managing Electronic Records

By Terry B. Nelson

Records Management Technical Bulletins

This publication, one of sixteen bulletins in the *2012 Local Government Records Management Technical Publication Series*, is a joint effort of the Municipal Clerks Education Foundation (MCEF), the International Institute of Municipal Clerks (IIMC), and the National Association of Government Archives and Records Administrators (NAGARA). Funding for this project was made available, in part, by a grant from the National Historical Publications and Records Commission.



The Municipal Clerks Education Foundation (MCEF), established in 1984, is a tax-exempt, nonprofit foundation under Section 501 (C)(3) created to raise funds for its partner, the International Institute of Municipal Clerks. IIMC uses these funds to promote, train and educate Municipal Clerks, making them proficient in the services they provide for the citizens of their community. MCEF is a diverse team of volunteers who are passionately committed to helping IIMC pursue its educational objectives.



The International Institute of Municipal Clerks (IIMC) is devoted to advancing the professionalization of the Office of Municipal Clerk and improving the efficiency of municipal government. The IIMC provides its members with educational, conference, reference, research, and informational services designed to keep them informed of changes in the professional community.



The National Association of Government Archives and Records Administrators (NAGARA) is a professional association dedicated to the improvement of federal, state, and local government records and information management programs and the professional development of government records administrators and archivists.



The National Historical Publications and Records Commission (NHPRC), a statutory body affiliated with the National Archives and Records Administration (NARA), supports a wide range of activities to preserve, publish, and encourage the use of documentary sources, created in every medium ranging from quill pen to computer, relating to the history of the United States.

Preface

Like every organization, local governments create and maintain large quantities of records. Many of these records not only are of great value to the local government, but also are of concern and essential to the citizens of the community. Federal and state-mandated program requirements, changes in growth and development patterns, expanded service needs, the use of computers and other technologies for creating and using information, and the proliferation of copies in various formats, have all contributed to this enormous accumulation of records. Each publication is intended to make available to local governments the basic principles, policies, and guidelines that should be followed in establishing a sound records management program and in carrying out sound records management practices.

The series is intended for local officials, with limited resources, who lack formal records management or archival training but who have custodial responsibility for records. These local governments include townships, villages, cities, counties, school districts, and other local political subdivisions and special-purpose districts. Each of the following publications in the series includes a bibliography that refers to other reading for more detailed information and guidance.

Overview:

Starting a Records Management Program, The Daily Management of Records and Information, Making Your Records Management Program Successful, Managing Records on Limited Resources, Funding Your Records Management Project

Creation, Collection and Storage:

Identifying and Locating Your Records, Establishing Records Retention, The Selection and Development of Local Government Records Storage Facilities, Developing a Records Storage System

Preservation, Promotion, Use and Access:

Archives for Local Governments, Protecting Records, Using and Storing Microfilm

Care, Management, and Preservation of Electronic Records:

E-Mail Management, Selecting and Using Document Imaging Systems, Managing Electronic Records, Preparing for E-Discovery

Copies of these bulletins are available on the IIMC and NAGARA websites.
IIMC at www.iimc.com • www.nagara.org

Acknowledgements

Meet the Author: Terry B. Nelson

Terry Blonquist Nelson is the Director of Salt Lake County Records Management and Archives in Salt Lake City, Utah. She is responsible for countywide records and information management services; administration of the County Archives; training and education of RIM issues; and compliance with federal, state, and local records laws and regulations. In addition, she is a private consultant in the field of records and information management. She is a graduate of Westminster College in Salt Lake City, Utah.

Terry is a member of the National Association of Government Archives and Records Administrators (NAGARA) and served as President of the Board of Directors from 2002-2004. She is also a member of the Society of American Archivists, AIIM International, and ARMA International, where she has been active in the local chapter. She is a member of the Utah Manuscripts Association where she served as chair and a past president of the Conference of Inter-Mountain Archivists. She has served as an instructor for the Western Archives Institute, Utah Municipal Clerk's Association Institute, Government Civil Practice Conference and is a contributor to the Utah Encyclopedia. She participated as a member of the Archives Delegation to South Africa in 2010.

Editor: Dr. Julian L. Mims III, CRM, CA

Julian Mims is a career archivist, records manager and educator. He directed the local records program at the South Carolina Archives from its inception. He was in charge of the Long Island office of the New York State Archives and Records Administration (NYSARA). As a Vice President and Award of Merit winner of ARMA International, he helped to found a record ten ARMA chapters. Dr. Mims is the author of the International City/County Managers Association (ICMA) best-seller, *Records Management: A Practical Guide for Counties and Cities*, and was editor of ICMA's *Electronic Records Management*. Earning a doctorate from the University of South Carolina in 2001, he has taught at six colleges and universities.

Special thanks to the support team:

Dale Barstow Project Co-Director and MCEF President, Municipal Code Corp., Tallahassee, FL

Paul R. Bergeron, MMC, CA Project Co-Director and NAGARA Liaison, Office of the City Clerk, Nashua, NH

Marian Karr, MMC MCEF Treasurer, Office of the City Clerk, Iowa City, IA

Chris Shalby IIMC Executive Director and IIMC Liaison, Rancho Cucamonga, CA

Table of Contents

Introduction	1
Developing Support for Managing Electronic Records.....	1
Building the Foundation.....	2
Systems and Applications Assessment	4
Collect data about electronic records creation within the system assessment tool.....	4
Leverage Existing Systems.....	5
Assess Organizational Risk.....	5
Create a Business Case	5
Program Requirements and Consideration	6
Functional Requirements	6
Technical Requirements.....	8
Operational Requirements	8
Compliance and Legal Issues.....	9
Disaster Recovery Issues	9
Email Management	9
Document Management/Digital Imaging	9
Voice Mail	9
Websites	9
Legacy Systems.....	10
Cloud Computing.....	10
Social Media	11
System Implementation	11
Project Management/Planning.....	11
Change Management.....	12
Long-term Preservation.....	12
Storage and Access.....	12
The Future - Emerging Technologies and Strategies.....	13
Conclusion	13
Resources - Definitions.....	14
Resources - Professional Organizations, Standards and Consultants Websites.....	14
Resources - Government Websites	15
Resources - Project Websites.....	15
Resources - Training.....	15
Bibliography.....	16

Reproduction is permissible with credit to the authors and the publication partners (MCEF, IIMC and NAGARA). Citation example: Author Last Name, Author First Name. "Title of Bulletin." Local Government Records Management Technical Publication Series. Ed. Julian L. Mims III. Rancho Cucamonga, CA: MCEF, IIMC and NAGARA, 2012. Print (or Web. Date of Access).

Introduction

Recordkeeping has long been a central component of government; documenting the services and functions provided to the residents it serves through the creation of records and information. Records management and the application of records retention schedules are the foundation on which government compliance and reporting is built.

Electronic records management (ERM) is the management of electronic records and the electronic management of non-electronic records such as paper, CD/DVDs, tape audio-visual files and other physical records. It is a component of an enterprise-wide content management system and may include document management, email and attachments, unstructured electronic records (such as those created in word processing, images, websites, and many other digital assets). It may consist of records contained or created in many different software applications and technologies. Its main function is to capture, manage, store, and provide content to records and documents to users, utilizing a life cycle approach of creation to final disposition.

Electronic recordkeeping presents new and unprecedented challenges, while requiring local governments to continue to manage records and information efficiently. Computer use has grown and developed since the days of large mainframe systems. The sheer volume of electronic records email makes it difficult, if not impossible, for individual employees to match content to existing retention schedules in determining what is or is not a record. In addition, local governments need to reduce risks and avoid loss of public trust, legal liability and costs to remediate damage if records or personal information are breached.

In addition, much electronic record content may have short-term value but remain in software and systems indefinitely due to the lack of retention processes. Finally, the largest amount of electronic records is created by government employees as unstructured data in word processing and spreadsheet applications. As a result, local government records programs are faced with big challenges to manage and access these records.



Developing Support for Managing Electronic Records

One of the most important aspects of managing electronic records is developing awareness of the need, and creating support, for electronic records management throughout the organization. The first step in this process is to understand the authorities and responsibilities of the records/ archives program within the governmental entity. Issues to ask and resolve include:

- Where is your records program located; in the clerk's office, in Information Technology, or is it part of another elected office? How will this affect developing support for electronic records management systems and plans?
- Does your current records program have the authority to establish an ERM program?
- Does your program have sole responsibility for this, or would it be shared with others (IT, Legal, Fiscal, or Administration)?
- Does your program have the support of higher level management (director, elected official, city manager, county council)?
- Does your program have management and budgetary support for new initiatives?
- Do you have information silos within your organization; systems that are not designed for collaboration and sharing?
- Do you understand the current political environment in your government? For example; during transitional periods such as an election year, would you have the support to push through a new software solution or request additional funding for a consultant?
- What are the barriers against trust and sharing; are there conflicting interests and agendas?

Once you have answered these and other questions that pertain to your local government's situation and culture, it's important to build on existing relationships and develop new ones that will ensure success in electronic records implementations. All offices, elected officials and users are stakeholders in an electronic records management program; it is just a question of degree and investment. It's important to work with council/commission staffs, attorneys/legal offices, information technology department, clerk and recorder, court offices, finance office, human resource department and any other local government office. All create and manage records, and can become your advocates.

Take opportunities to present information at staff meetings at all levels to educate funders and managers. Create a broad strategic plan or presentation that addresses electronic records needs and requirements. Meet individually with elected city/county officials to establish advocates for your electronic records projects. Focus on the importance and value of creating an electronic records environment where sharing information and records is an organizational resource.

Many benefits result from establishing or extending an electronic records management program. Facilitating more efficient access to records, controlling growth of information, reducing operating costs and improving productivity are some of the advantages. Incorporating new technologies, complying with retention/legal regulations, as well as managing e-discovery and litigation issues are also important considerations for local governments.

Promoting an enterprise-wide approach for the management of electronic records should be a major goal of the program. While there is individual employee responsibility in the creation/management of information and records, compliance with an enterprise system provides benefits in organization of information, accessibility/reusability, while ensuring document integrity, version control and legal compliance. Convergence of people, processes and technology is critical in developing an electronic records management program.

Building the Foundation

First in developing a good foundation for electronic records management is to establish policies and procedures. Policy intent is to provide requirements, guidelines and best practices that meet existing legal/regulatory requirements and provide for access, preservation, management and retrieval of electronic records. Promote best practices in capturing/managing/retaining electronic records during the creation, retention of, and access to electronic records. Policies should address organizational/operational needs, be clear, and easily understood.

Policy should address records regardless of format, and include retention, disposition, access/classification, data security, compliance requirements, long-term preservation, and access issues. Policies must address agency/elected office role in managing records, and provide a framework for developing understandable procedures using required business controls and processes. Statutory requirements of state records laws, federal laws, regulations, and local ordinances should be referenced in the policies.

Update existing paper-based retention policies to include unique elements of managing electronic records and digital documents. The existing records management program should incorporate electronic records, rather than establish separate programs or retention processes for electronic records.

Once government-wide policies are in place, develop good operating records management procedures. They should be realistic, practical and representative of organization needs. They should support system maintenance and administration. Records management professionals, with information technology specialists, should work together to determine roles/responsibilities in managing records content, as well as technology needed. In addition, guidance on managing users, on-going maintenance concerns, data/system migration strategies, training needs, and periodic review for compliance /audit requirements should be addressed.

Many standards / best practices exist to assist local governments in crafting good policies for the management of electronic records. Professional organizations that issue guidance and standards include ANSI (American National Standards Institute), AIIM (Association for Information and Image Management), ARMA International (Association of Records

Managers and Administrators) and ISO (International Organization for Standardization).

There is no single standard or policy that can be applied to any given organization. Many policies, organization standards, white papers, vendor studies, and consultants' guides can provide advice when establishing an electronic records program. Determine which one best serves the needs of your local government program.

The list below is a starting point for local records managers to research and use. Keep in mind that many guidelines available through ISO, ANSI and AIIM and consultant websites must be purchased, whereas federal, state and local government records program websites usually have resources that are free.

- **DoD 5015.02-STD RMA Design Criteria Standard.** This standard for records management applications was developed by the Department of Defense and includes basic requirements based on operational, legislative and legal needs. The reference documents outline the functional baselines, mandatory requirements, and data elements that records management application software should include. This standard has been endorsed by the National Archives.
- **ISO/TR 15489-2:2001; Information and documentation – Records management – Part 2: Guidelines.** This international standard provides an ERM implementation strategy divided into planning/assessment and design/implementation. Eight steps include conducting a preliminary investigation, analyzing government (business) activity, identifying requirements, assessing existing systems, identifying strategies, designing the system, implementing the system, and conducting post-implementation review.
- **ISO 16175-2:2011 Information and documentation -- Principles and functional requirements for records in electronic office environments Part 2: Guidelines.** This international standard defines functional requirements for digital records management systems. It is applicable to products that are often termed “electronic records management systems” or “enterprise content management systems”. This standard uses the term digital records management systems for those software applications whose primary function is records management. It includes digital objects created by email, word processing, spreadsheet and imaging applications (such as text documents, and still or moving images), where they have administrative and business value, and are managed within digital records management systems. It does not address requirements such as performance, scalability and usability.
- **ISO/TS 23081-2:2009 Information and documentation -- Managing metadata for records -- Part 2: Conceptual and implementation issues.** This standard establishes a framework for defining metadata elements that are consistent with the principles and implementation considerations outlined in ISO 23081-1:2006. The purpose is to enable standardized description of records and critical contextual entities for records; provide common understanding of fixed points of aggregation to enable interoperability of records, and information relevant to records, between organizational systems; enable re-use and standardization of metadata for managing records over time, space and across applications. It further identifies enable implementation of metadata for managing records. It identifies issues in implementing metadata for managing records, explains the various options related thereto, as well as paths in implementing metadata for managing records.
- **The Sedona Guidelines: Best Practice Guidelines & Commentary for Managing Information & Records in the Electronic Age. Second Edition November 2007.** This guideline addresses managing electronic records needed for business, statutory, regulatory and legal needs. Information management and records retention crosses boundaries of legal compliance, records management and information technology.
- **Minnesota State Archives – Trustworthy Systems Handbook.** This guideline addresses how to establish information systems, planning teams, metadata, and system criteria.

Systems and Applications Assessment

This analyzes local government processes, systems, and applications that create records and information. It explains functional organizational structure. Assessment determines roles/groups that perform tasks/processes.

An enterprise-wide approach to electronic records management assesses of the entire organization's system. Production applications that create records already exist within the organization. Information about these systems understands where electronic records are created and maintained. Most production systems do not have retention /disposition management functions. Project size/system complexity determines time needed to complete the assessment.

It is important to have experienced IT write out professionals on the assessment project team. They will know mainframe, client/server and desktop environments as well as hardware/software that run applications, plus data structure/process.

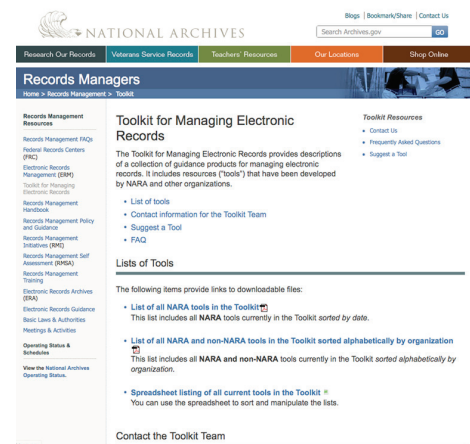
The records manager brings records inventorying, scheduling, and electronic records retention principles to the assessment project team. A survey tool should document questions and responses. IT staff may provide system information; on-site user-interviews should discuss record content issues. Each survey tool should include:

- General system/application including type / structure of data. For example, a personnel management system may create recruitment and other employment records that are used by human resource employees exclusively. However, it may also explain how the system runs, the hardware/software application, database type, and application size. IT may already document this information.
- Data owners and application: This focuses on data creators/users and the employee in charge of data. This may be the elected official, a manager, even technical support staff. It is important to know if system ownership is shared and input is done by multiple offices. Information may be in IT, or the operations or support department of the using-office.
- Lists of system outputs: This lists of reports that the system generates: online, paper, microfilm or fiche.

- System backup information: This section documents data backup and tape rotation cycles important in developing the electronic records retention schedule.

Collect data about electronic records creation within the system assessment tool

- Describe records generated by the system. For example, ask what documents and forms the personnel management system generates.
- Does the application flag inactive records for purging or archiving? If not, does the system have a filed-for closure date on a file that could be used for final disposition?
- Are any retention protocols currently in place in the system? This information may reveal paper records related to this system.
- Are there legal requirements for the records being created? Are the records subject to audit? Legal staff or the city/county attorney may need to be involved to answer these questions.
- Has the system ever been through a conversion? This information may reveal authenticity and reliability issues relative to the records.



Screenshot of National Archives Toolkit for Managing Electronic Records, June 2011.

Leverage Existing Systems

Many local government offices already use software to manage records; separate digital and electronic initiatives have been undertaken. For example, the recorder's office may have a scanning operation in place for deeds and mortgages or the city library may have its own application to image library management records. Analyze existing document or electronic systems that address leverage across multiple offices. This will save time and money in researching and developing new systems.

Some systems may capture records, such as an imaging application, and others may be general business applications such as financial or human resource systems. These systems are used for daily business functions and while they create records, they do not manage them effectively. Assessment determines whether records are being captured correctly, and if not, what needs to happen to ensure that they are. It also evaluates both technical and operational effectiveness of those systems. Any deficiencies are identified and used to justify and illuminate requirements of a new system. Information about existing systems is gathered during the systems and applications assessment, but it's always a good idea to meet with management of the using-office to get the history of a project, implementation concerns, and user viewpoints. This will inform future decisions related to the application.

Electronic Records Inventory Form

The purpose of this form is to inventory electronic records to enhance electronic data management (naming conventions, information control, and records retention).

Agency _____ Records Group #: _____
 Contact / Phone Number: _____ Date: _____
 E-mail Address: _____
 Records Analyst: _____

System Name
Date of Creation:
Language:
Users:
General Description:
Purpose / Function (Tie to Agency Mission)
List and Descriptions of Outputs:
List and Descriptions of Tape Generation and Data Backup:
Application Developers:
Version History:
Predecessor System:
Is this system the only one? Only electronic?
Complimentary / Related System:
Data Model:
Data Dictionary (Within? Where?):
Designed to Replace Paper Records:
Records Series:
Data Structure:

**Sample electronic records inventory form,
ARMA International website, June 2011**

Assess Organizational Risk

Local governments face risks to their organizations by not establishing electronic records management programs. Risk factors vary and depend on the types of services they provide, their ability to access information quickly, the consequences of lost information and increased legal liability, and possible fines and penalties for non-compliance. The inability to find and retrieve critical information when requested by the public or internal offices leads to inefficiencies and increases the costs of doing business. This may be reflected in a loss of public confidence and may be reflected in increased fees to residents.

In addition, there are many records management challenges regarding management and compliance of electronic records. Traditional paper-based retention policies and schedules are difficult to apply to a wide range of electronic record types in order to comply with laws, regulations and internal policies. There are high costs associated with non-compliance with new laws and regulations. Some regulations, such as the Health Information Technology for Economic and Clinical Health (HITECH) Act and industry guidelines such those required by the Payment Card Industry (PCI), require local governments to implement system changes quickly in order to meet compliance requirements. Most compliance and reporting issues rely heavily on IT staff rather than working with existing records management programs. Many electronic records management implementations have poor success due to lack of support from users. Lack of user confidence means that systems won't be used effectively or consistently, thereby increasing legal risk to the organization.

Create the Business Case

Develop a business case or statement of needs to warrant an electronic records management program. This can gain needed managerial and financial support. This document can contribute to a RFI (Request for Information) or a RFP (Request for Proposal) to obtain consulting services and/or software solutions. This business will provide valuable information for project planning and future budget development.

A good business case may include:

- project identification – identifies office of responsibility (including any partners) and contact information.

- executive summary - outlines and defines the project.
- background driving the project – outlines, for example, your intent to buy new software, replace a system, implement a system to comply with a regulation or law, or funds needed for consulting services.
- proposed project objectives and solutions - lists the general benefits / risks of the project but doesn't identify the specific type of product or solution needed. This section may include issues regarding better management of stored data/ records, controlling records growth, and reducing data storage costs. Address IT security and business continuity/disaster recovery.
- budget estimates – identify potential one-time/ on-going costs for the project.
- cost analysis – explain cost benefits that may result from the project. For example, it may document whether employee time is saved in accessing documents, or personnel costs are reduced due to less paper processing activities.
- impact analysis – identifies stakeholders or other offices/areas that may impact or benefit from the project.
- proposed timeline – establishes project activities/ deadlines.
- metrics – identifies measures, outcomes and/or goals that should be met by the project.

Program Requirements and Considerations

An electronic records management solution, particularly if enterprise-wide, requires thorough analysis and study of included elements. Designing the system calls for identifying processes/tools needed to meet requirements. Records managers should work with subject matter experts and users within the organization to draft a system design.

Once your organization has decided to pursue an enterprise-wide solution, created electronic records policies, and drafted a business case for a solution, stakeholders must develop the requirements. Records management needs to identify what is necessary to create a records control framework and satisfy regulatory, organizational and business requirements: Those include records management requirements or architecture, technical, day-to-day

administration, compliance and reporting obligations, or operational requirements. At the end of this process, the organization should have a framework or project plan in place to ensure that records are created, used, and managed appropriately. Outputs from this stage might include detailed project plans, documentation of changes to requirements, and a detailed system design. This framework will shape the design of the electronic records management systems.

Data retention requirements for the electronic records management system/application should address records management functional requirements as follows:

- Provide a method for defining records capture, which may include automatic classification of records according to approved retention schedules or user-defined by drag and drop.
- Provide a method for retention requirements by matching business rules and file plans.
- Provide a process for applying destruction (deletion) dates based on retention requirements.
- Identify which electronic records are eligible for destruction, mark them in the system, and provide a list for authorization.
- Provide a process for litigation or audit holds on records eligible for destruction that must be kept.
- Implement disposition decisions, either for destruction or migration to a permanent records repository or digital archive.
- Maintain a log or audit trail of electronic records that have been destroyed.

Functional Requirements

Functional retention requirements should be addressed by the records management program. Begin with a records inventory of both electronic and paper organizational records. This will create the foundation to build file or classification plans. These are organized file classes of categories of records with common attributes such as function or agency origin, access restrictions/requirements, and the retention period/disposition. Electronic systems usually manage this information within file directory structures (FDS) which are folders within the system on a network. The inventory process should define the government activities (functions) of each office or agency and the records created from the functions.

The inventory process will define the top level classifications, such as Finance or Human Resources (see Sample file plan). During the inventory process, existing records retention schedules should be reviewed and analyzed to determine if the schedules can be incorporated into the electronic file or classification plans. Paper-based retention schedules may not translate well in an electronic environment and may need to be condensed into a functional-based classification plan. This should be easier to implement within an electronic system, or developed from the inventory process.

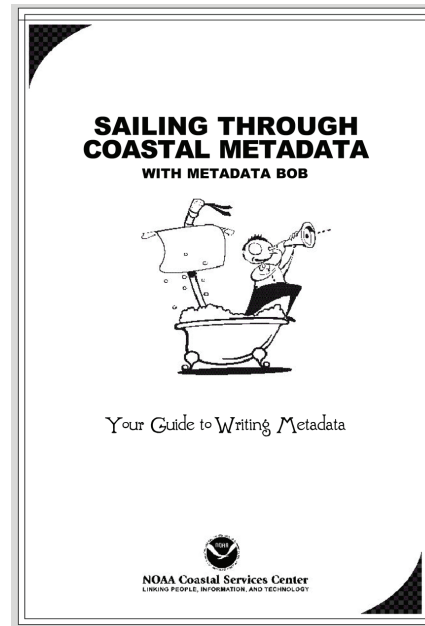
In addition to retention requirements, file plans should include important records management attributes: such as records descriptions, access restrictions, a control number (such as series or function number), and any other information critical to management of the record. The file plan should also identify any records series that may be an exception to inclusion in a broader functional category. An example of this would be records that must comply with Health Insurance Portability and Accountability Act (HIPAA). These records may not be managed as effectively if included under a general category of Medical Records due to stricter access restrictions required by the federal regulation.

Office	Section	Record(s)	Description	Access Restrictions	Retention	Series Number
Finance			Records of the Finance Department for XYZ City			
	Operations	Invoices Accounts Payable Accounts Receivable	Records documenting the city's financial transactions for services and materials purchased by all city offices. Purchase Orders	Public per state law	4 years	F-0001
	Budget	Working papers Budget request Agency Spreadsheets	Records created on a calendar year basis to develop city-wide budget plans.	Public per state law	2 years	F-002

Sample File Plan

Metadata can be described as data about, or describing, other data; such as data –about- data elements, about records, or about data. Metadata allows users to locate and evaluate data consistently. Its basic elements are a structured format and a controlled vocabulary, which together allow for a precise and comprehensible description of content, location, and value. The familiar forms of metadata for government records are the recordkeeping standards and the records retention schedule. Government agencies use metadata for:

- legal and statutory reasons (to comply with laws, regulations and rules of evidence)
- technological reasons (to document electronic systems)



A Metadata writing guide published by the NOAA Coastal Services Center available at the University of Hawaii at Hilo.

Metadata is useful for the management of information in any storage format, paper or digital. But it is critical for electronic or digital records because that is how the record is made useful and accessible. Databases store and provide access to metadata. Most software applications automatically create metadata and associate it with files. For example; header and routing information that are part of e-mails are metadata. For electronic records management systems it may be a combination of system-generated and manually created information that will provide the best access to the records.

Metadata can also define the business rules and software code within the system and allows the information to be usable. Metadata, such as that created using eXtensible Markup Language (XML), allows for extraction and use based on specific components of a metadata record. Some of the basic elements of metadata may include:

- agency: office or organizational unit responsible for creating the record, or for some part of the record.

- rights management: any policies, regulations, or records law classifications govern or restrict access to, or use of, the records.
- title: name(s) of the record.
- subject: topic of the record.
- description: a textual explanation of the content, purpose or function of the record.
- relationships: links between one record and another, or parts of records and other information.
- date(s): span or inclusive dates of the record or records series.
- format: storage medium and data format of the record.
- record identifier: unique code for the record.
- management history: listing of all records management actions performed on the record during its lifecycle.
- audit or use history: activities related to access or use of the record in the system during its lifecycle.
- disposal: information about authorized disposal of records.
- legal requirements or mandate: recordkeeping responsibilities and requirements such as legislation, local ordinance, policy, standard, or guidelines which require the organization to create, keep, dispose of, and control access to the record.

Technical Requirements

Technical system requirements address the issues specific to your government's information technology architecture and what is needed to manage the system. Designing the electronic records system requires establishing the technical requirements necessary to ensure:

- compatibility with existing system architecture.
- integration with the organization's business processes.
- hardware and storage requirements, configuration and types of equipment needed.
- software requirements.
- security control and privacy requirements.
- infrastructure requirements.
- connectivity regarding internal and external needs.

- user requirements; such as number of users supported by the system.
- system administration and staffing requirements for on-going management of the system.
- service agreements and system maintenance.
- testing, operations and system requirements.
- conversion control or migration: some systems provide automatic conversion (they automatically convert one file format to another when the file is designated as a record).
- addition of records into the system and automatically assignment of the correct version designation.
- metadata capture and use. The system encompasses appropriate metadata.

Operational Requirements

Operational system requirements are defined within the project scope of work and must meet certain criteria (administrative, functional, technical, and user environment). It must be flexible, scalable, and usable for current needs, yet sensitive to future administrative and regulatory requirements. It must accommodate technological change, operate in a cost-efficient environment, coordinate work processes with the technical team, and provide the following services:

- identify and define the business needs of the project.
- comply with all non-technical requirements such as project management and contractual obligations.
- delineate responsibilities of vendors and local government.
- coordination and compliance.
- implementation.
- user training and education needs.
- software support.
- quality and type of support.
- procedures or criteria for system management.
- documentation, including manuals, software guidance, mapping tools, and system operation procedures.

Compliance and Legal Issues

Electronic records management systems must comply with administrative, legal, and regulatory requirements of state law and local ordinance. In addition, federal regulations or industry guidelines that affect recordkeeping should be included in the compliance requirements. Obtain assistance from your legal department or attorney's office to determine which laws and regulations apply to the project. State records laws vary regarding what criteria must be met to maintain public records and respond to requests; ensure that new electronic records management systems meet these requirements.

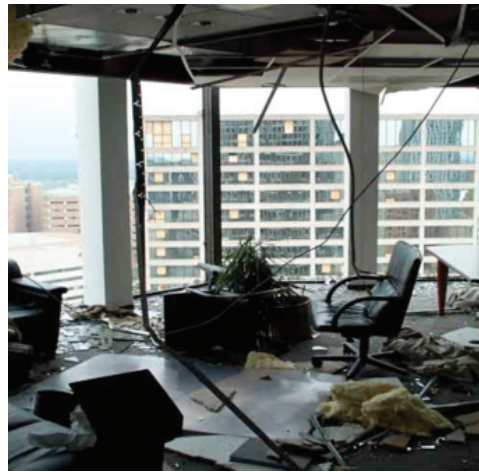
The organization must ensure that the system can suspend ordinary destruction practices in the event of legal preservation requirements due to litigation or audit. E-discovery duties present new challenges for local governments, particularly small organizations that may contact legal services. In the event of potential litigation, ensure that the electronic records management system can meet the requirements of production under the Federal Rules for Civil Procedure.

Disaster Recovery Issues

Disaster recovery and business continuity are important considerations to include in the overall electronic records management solution. Disaster recovery processes will protect the most business-critical processes and minimize unplanned downtime. A good disaster recovery (DR) plan addresses restoration of network and systems, in addition to critical applications and functions. Disaster recovery backups are not a good substitute for records retention or litigation and e-discovery response. Recovery methodology processes are subject to balancing solutions, downtime and cost.

Issues to consider when incorporating DR issues into an electronic records management system are:

- recovery of the IT infrastructure.
- restoration of operational and business processes.
- recovery time for data availability, based on analyzing system criticality.



Bank building after tornado in Ft. Worth, TX, March 28, 2000.

Email Management

E-mail may be official government records and should be included in an overall electronic records management strategy. For more information refer to IIMC-NAGARA Technical Bulletin E-Mail Management.

Document Management/Digital Imaging

Document management or digital imaging systems provide more efficiency and productivity, as well as greater access to certain types of information. Refer to IIMC-NAGARA Technical Bulletin Selecting and Using Document Imaging Systems.

Voice Mail

Voice mail systems, particularly VoIP systems, can generate digitized telecommunications that can be stored, managed as a digital object, and retrieved as a record. These telecommunications, based on content and relevance, may be a record under state law and must be managed as such. For more information refer to IIMC-NAGARA Technical Bulletin E-Mail Management.

Websites

Increasingly, local governments utilize websites to distribute information and communicate with residents/users. Websites may contain record content such as annual reports, publications, summary statistical data, and other governmental records unavailable in other formats. Some content may be records or portals to other information. Websites must be

able to verify record content as government's website, and date-stamped to attest that it was online at a certain date. It must be represented as the original, unchanged over time. Digital web records must be accepted in court as well as to place the record in time context for historical research purposes.

Many website content management systems have version control to manage updates to the websites, but may not be as robust as those available in ERM systems. Documents or web pages with record content must link to an appropriate retention period.

- Webpage content usually exists in multiple places. Identify where the data exists and determine which is the record to be managed. For example, an annual report published to a website may also exist as a word processing document that is a record copy and managed from the system in which it resides. All website content should be inventoried to determine if it meets the definition of a record. If so include it in the web records retention schedule. Earmark the webpage if it is the original/official record. Consider all others convenience or reference copies, and document it in the retention schedule.
- Web servers are not long-term or records repositories; web records should be assigned retention and migrated with their associated metadata to an electronic records management system.
- Web content is updated frequently and records retention schedules should address issues of superseded records, and how long they must be kept. This decision should be based on government business practices and the inherent value of the content. In addition, due to formatting/and functionality of web content, a printed version of the record may not preserve the content or the functionality.
- Web page content should determine retention requirements during the planning and design phase.

Legacy Systems

Older information systems present challenges of access to electronic records over time. Records are dependent on the older technology in which they reside. This becomes a problem when legacy systems were designed using hardware/software that is rapidly becoming obsolete. They may use proprietary

systems and software, and may no longer be supported by the vendor. The local government organization must either plan to continuously support legacy systems, such as many mainframe applications, or migrate the records to newer systems.

Since migration can be an expensive process requiring programming or extraction, organizations should closely analyze the records contained in those systems and their retention periods to determine what is needed for future use or what is required by law to be kept.



**UNIVERSAL AUTOMATIC COMPUTER 1, first delivered
March 31, 1951 to the US Census Bureau.**

Cloud Computing

Cloud computing relies on sharing computer resources. It utilizes off-site servers for data storage and management owned and operated by third-party providers. Government agencies use cloud services to save money and cut IT staffing and resource costs. Records managers should ensure contract language with the third-party vendors includes risk management issues relating to records management and access. They include but are not limited to:

- Data integrity and protection relating to access to the data. The vendor must ensure that your data is kept separate and secure from other client's data.
- Data security and auditing regarding backups, data loss, data migration, integration with existing databases, data corruption and use of encryption.
- Data service issues including down time and service restoration.
- Compliance issues relating to applicable laws and regulations, legal requests for records or

information under state records statutes, and e-discovery requests.

- Records management requirements for long-term functionality, sustainability and integrity of electronic records in the system.

Social Media

Social media, or Web 2.0 applications, present unique challenges in management as governments grapple over what content may or may not be a record that requires management and access. Social networking sites such as Twitter, Facebook, LinkedIn, YouTube and Flickr have exploded as a means to communicate, market, and engage existing and potential audiences and users. Government agencies have realized the real-time value of these sites and as a result of their use may be creating records that document government activities.

Currently, these records are no longer limited to electronic records created by the agency and managed on internal networks; they include blogs, wikis, RSS feeds, and social networking sites hosted and managed by third parties. The biggest issue surrounding these records is that technologies are developing faster than rules and regulations to manage them. In addition to management concerns, these may be records under state and local law, and government agencies must also recognize the importance of online records retention in the case of litigation.

In order to remain legally compliant with existing regulations, government agencies must ensure that their social media which meets the definition of a record is preserved in a way that enables access if necessary. Local governments should determine 1) what use of social media sites within their government constitutes a record under applicable state law, and 2) develop policies that address use of social media and management of the content. A good policy should address:

- scope and definitions: defining that policy applies to all employees, contractors, volunteers, consultants and service providers of local government.
- statement of use: a section devoted to how sites should be used/monitored, terms of use, security or IT considerations, and employee training requirements.

- retention and management: state records laws may require that social media content be managed as records, for easy accessibility. Enforcement and exceptions: should include information about how the policy is to be enforced if violated, listing exceptions to the policy.

Once policy is in place, practical concerns about how to manage social media as records must be addressed. For example, the City of Seattle's policy recognizes that Washington State law requires records retention schedules apply to social media formats and content. Local government records managers and information technology staff should work closely together to determine what, if any, technological solutions can be used to manage social media records. New software solutions are emerging to assist local governments.

System Implementation

Once the Request for Proposal (RFP) has been written, bids proffered and a contract awarded, the assessment team and stakeholders should focus their project management plan on system implementation.

Project Management/Planning

The next step in the process for designing and implementing a records management system is implementation of the system. In this phase, the project team will develop and implement the solution previously designed, including testing, piloting, and the actual implementation. The roles of records management, information technology, administration, and legal staff need to be clarified during this process. Testing and support training for records management and information technology staff should occur during this time frame. Project management is more than assigning a manager and developing timelines/deadlines. The project plan should anticipate and address issues that could damage a successful implementation of the project. Issues to be aware of include:

- project expectations – are the goals realistic and the assumptions based on common understandings?
- project resources – is there enough funding for the life of the project, adequate staffing in both records management and information technology to support and manage the system?

- communications – do project managers for both the organization and the vendor have good communications?
- project technical needs - does IT understand all technical needs and are they able to make adjustments during the process?
- organizational culture issues – are records managed as an informational asset; how well are RM and IT functions integrated and what level of support does records management have? Ensure that the project has the right levels of support for success.

Change Management

Change management during the implementation of an electronic records management system is critical. Users can make or break a successful implementation depending on if they are included in the process. New systems may be perceived as difficult, time-consuming to use, or just different and change management planning can help overcome those obstacles. Elements to consider in a change management plan are:

- communication – between team members, the team and users, and between users.
- identification of team leaders – ensure all stakeholder areas are represented on the team so they can become “champions” for the project.
- monitor for continual participation by employees.
- ensure flexibility in planning and scheduling of testing the system.
- develop, where needed, Train the Trainers modules in order to send a consistent message.
- avoid a Big Bang installation by implementing in phases.
- conduct follow-up meetings.
- listen to user issues. Create user/focus groups to identify issues.
- conduct on-going education and user training of the system. What training environment do you have? Develop multiple ways of delivering the training (such as on-site or web-based).

The organization should consider conducting a post-implementation review. This step in the implementation framework is recommended by ISO 15489 as a way to allow the organization to reflect upon the system as delivered and the delivery process itself. It can identify gaps and areas for improvement. It may also reveal the need to establish a monitoring

process: changes can be anticipated and addressed, either during intermittent system upgrades or on demand.

Long-term Preservation

Long-term records must be stored in sustainable systems to ensure accessibility, integrity, confidentiality, and authenticity of the record over time. Local governments that utilize electronic formats or software systems must ensure that the storage media, including the hardware, software and other system components, supports the on-going retention period. Data migration strategies must be included in the management of long-term historical records.

Storage and Access

When recorded information is intended to document an action or state of affairs, it is essential that the message it transmits be fixed. An authentic record is what it purports to be - free from tampering or corruption. Accessibility of electronic records should be reviewed and tested regularly to confirm accessibility and cost effective retrieval of accurate information.

A digital archive is an electronic system or repository dedicated to preserving electronic records that have permanent legal, fiscal or historical value. Local governments generate many records of permanent value that are increasingly created and stored in electronic and digital information systems. A digital archive should provide a simple, reliable, and persistent method to capture, identify, index, store, and retrieve records of historical value. It should also underwrite a cost-effective means to access these records over time, finance migration strategies and ultimately arrange for public access to these records. Local government must think through the issues of long-term records access and preservation when designing an electronic records management system or solution.

The Future - Emerging Technologies and Strategies

New technologies and services are emerging in the marketplace at a fast pace. As governments strive to provide services to their residents, there are political and economic pressures to adopt new systems and services based on accessibility, low cost or other factors. Local government records managers, Information Technology staff and elected officials should work together to find the best fit for their business needs and existing infrastructure.

Conclusion

Local governments must weigh the potential benefits in implementing electronic records management solutions against the risks and consequences of doing nothing. The push for more open and transparent government balances against increased demands for accessible, reliable and discoverable records and information. Data and records must be managed as informational assets.

There are many reasons electronic records initiatives and projects fail. It's important to understand the problems and mistakes that can occur in undertaking this process. It's easy to become overwhelmed by the sheer magnitude of a project of this nature. In addition, local records programs need to understand the value of their records, develop workable procedures in addition to the policies, and strategize to work together as a team.

By protecting the integrity and authenticity of government records through good records management practices, local governments will sustain the preservation of their community history, and provide decision-makers with the tools needed to make better decisions for the residents they serve.

Resources - Definitions

- **CLOUD COMPUTING:** A type of computing that relies on sharing computer resources. It may utilize off-site servers for data storage and management that is owned and operated by third-party providers. This is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.
- **ELECTRONIC RECORD:** a record containing machine-readable as opposed to human-readable information, consisting of character-coded electronic signals that can be processed and read by means of computers. A record stored on electronic storage media.
- **ELECTRONIC RECORDS INVENTORY:** the identification, description, and quantification of all computer-based records maintained by an organization, generally by applications or other discrete bodies of electronic records stored in various computing environments.
- **ERM:** Electronic records management (ERM) is the management of electronic records and the electronic management of non-electronic records such as paper, CD/DVDs, tape audio-visual files, and other physical records.
- **FILE DIRECTORY STRUCTURES (FDS):** electronic hierarchies of folders on a network.
- **FILE PLANS/CLASSIFICATION PLANS:** hierarchically organized file classes established to manage and control records. File classes are categories of records with common attributes such as the functional purpose, access requirements, retention period, and disposition.
- **LEGACY SYSTEMS:** computers and related hardware, software, and data that remain in use after the organization has installed newer technologies and systems.
- **METADATA:** data about or describing other data; such as data about data elements or attributes (name, size, data type); about records or data structures (fields, columns); or about data (where it is located, how it is associated, ownership).
- **SOCIAL MEDIA:** Web 2.0 technologies characterized as a collection of Web tools that facilitate collaboration and information sharing. Web-based communities and hosted services include social-networking sites, video and photo sharing sites, wikis, blogs, virtual worlds, and other emerging technologies.
- **XML (eXtensible Markup Language):** a flexible, non-proprietary set of standards for annotating or tagging data with labels that permit computers to process the files.

Resources - Professional Organizations, Standards and Consultants Websites

- ANSI (American National Standards Institute) <http://webstore.ansi.org>
- AIIM (Association for Information and Image Management) www.aiim.org
- ARMA International (Association of Records Managers and Administrators) www.arma.org
- ISO (International Organization for Standardization). www.iso.org/iso/catalogue_detail.htm?csnumber=35845
- IIMC (International Institute of Municipal Clerks) - education programs www.iimc.com/index.aspx?NID=8
- NAGARA (National Association of Government Archives and Records Administrators) publications www.nagara.org/displaycommon.cfm?an=1&subarticlenbr=119
- NARA (National Archives) - information for records managers www.archives.gov/records-mgmt/
- The Sedona Conference, Electronic Document Retention and Production Publications. www.thesedonaconference.org/
- Cohasset Associates, Inc. www.cohasset.com
- NIST (National Institute of Standards and Technology) www.nist.gov/index.html

Resources - Government Websites

- Kansas State Historical Society, Kansas Electronic Records Management Guidelines <http://www.kshs.org/p/kansas-electronic-records-management-guidelines/11331>
- Minnesota State Archives, Trustworthy Information Systems Handbook www.mnhs.org/preserve/records/tis/tis.html
- Joint Interoperability Test Command Records Management Application (RMA) DoD5015.02-STD Electronic Recordkeeping System Compliance Testing Program <http://jitc.fhu.disa.mil/recmgt/>
- City of Seattle Social Media Policy - www.seattle.gov/pan/SocialMediaPolicy.htm
- State of Kentucky Electronic Records Retention Schedule - <http://kdla.ky.gov/records/recreten-schedules/Documents/erecordsgeneral.pdf>
- North Carolina Best Practices for Social Media Use Dec 2009 - www.records.ncdcr.gov/guides/best_practices_socialmedia_usage_20091217.pdf
- Arizona State Library, Archives and Public Records General Records Retention Schedule for Electronic Communications and Social Networking Records - www.lib.az.us/records/documents/pdf/state%20-%20email.pdf
- Washington State Archives Digital Archives Project - www.digitalarchives.wa.gov/state/washington/StaticContent/Feasibility%20Study.pdf

- Designing Social Media Policy for Government: Eight Essential Elements. A free archived webinar offered through the federal government that provides an overview of the importance of a good government social media policy, differences in its use, essential elements of a good policy, the drafting process, and how to involve important stakeholders in the process. www.usa.gov/webcontent/wmu/spring2011/social-media-policy.shtml

Resources - Project Websites

- The Long-term Preservation of Authentic Electronic Records: Findings of the InterPARES Project. www.interpares.org/book/index.htm

Resources - Training

- Electronic Records Management. An on-line course from ARMA International about developing an ERM program, statement of needs, methods to manage various electronic records, standards and legal requirements. This is a fee-based course. www.arma.org/eweb/DynamicPage.aspx?WebKey=35B79A60-E570-40F9-B74E-5AEE5DF46147

Bibliography

Stephens CRM, FAI, David O. and Wallace, CRM, Roderick C. “Electronic Records Retention: New Strategies for Data Life Cycle Management.” Lenexa: ARMA International, 2003.

Saffady, PH.D., William “Managing Electronic Records. 4th Ed.” New York: ARMA International, 2009.

The Sedona Conference, “Electronic Document Retention and Production Publications, 2nd Edition.” The Sedona Conference, Nov. 2007.

Minnesota State Archives. “Trustworthy Information Systems Handbook.” Trustworthy Information Systems Project. Web. Jun. 2011.

“The Digital Records Conversion Process: Program Planning, Requirements, Procedures.” Lenexa: ARMA International, 2007.

Dollar, Charles M. “Authentic Electronic Records: Strategies for Long-Term Access.” Chicago: Cohasset Associates, Inc., 1999.

“Website Records Management.” Lenexa: ARMA International, 2009.