Digital Preservation Standards, Guidance, and Tools

- Ohio Electronic Records Committee (www.ohioerc.org)
  - Guidelines
  - Tip Sheets
  - Resources
    - General Electronic Records Management
    - Digital Preservation
    - Document Imaging Policies & Guidelines
    - Technical Registries (http://ohioerc.org/?page_id=1366)
    - Tools (http://ohioerc.org/?page_id=1384)

- National Archives and Records Administration
  - *NEW Universal Electronic Records Management Requirements (www.archives.gov/records-mgmt/policy/universalermrequirements)
  - Format Recommendations (www.archives.gov/preservation/formats)
  - Electronic Records Archives (www.archives.gov/records-mgmt/era)
  - Electronic Records Management Automation (www.archives.gov/records-mgmt/prmd/automated-erm.html)
  - Federal Requirements for Including Recordkeeping in Agency Electronic Information Systems (www.archvise.gov/records-mgmt/handbook/federal-requirements.html)
  - Toolkit for Managing Electronic Records (https://www.archives.gov/records-mgmt/toolkit)
  - Records Management Language for Contracts (www.archives.gov/records-mgmt/handbook/records-mgmt-language.html)

- Library of Congress
  - Sustainability Factors for Digital Formats (https://www.loc.gov/preservation/digital/formats/sustain/sustain.shtml)
  - Sustainability of Digital Formats (https://www.loc.gov/preservation/digital/formats/)
- National Digital Stewardship Alliance
  - Levels of Digital Preservation (http://ndsa.org/activities/levels-of-digital-preservation/)
- National Archives of the UK
  - DROID File Profiling Tool (http://www.nationalarchives.gov.uk/information-management/manage-information/policy-process/digital-continuity/file-profiling-tool-droid/)
  - PRONOM Technical Registry (https://www.nationalarchives.gov.uk/PRONOM/Default.aspx)
- Council of State Archivists
  - PERTTS Portal (Program for Electronic Records Training, Tools and Standards)
  - State Electronic Records Initiative (SERI)
- ARMA International (www.arma.org)
- State Guidelines
  - North Carolina (http://archives.ncdcr.gov/For-Government/Digital-Records)
  - Texas (https://www.tsl.texas.gov/slrm/recordspubs/lgbullb.html)
  - Kentucky (https://kdla.ky.gov/records/sarc/Pages/ERWG.aspx)
  - Missouri (http://www.sos.mo.gov/records/mereti/)

Ohio Historical Records Advisory Board
C/O Ohio Historical Society State Archives
800 E. 17th Ave.
Columbus, Ohio 43211
614-297-2536
statearchives@ohiohistory.org

10 Reasons Why Electronic Records Need Special Attention

From the Council of State Archivists
www.statearchivists.org

For Electronic Records Day, CoSA invites you to think more about electronic records!

1. Electronic records require ongoing attention and care to remain accessible, useable, and authentic.

2. Electronic records can become unreadable very quickly. While records on paper are readable after thousands of years, digital files could be inaccessible in just a few years.

3. Digitizing paper records is not simply scanning paper records and placing the files somewhere. Successful scanning projects are planned in detail and include ongoing management expenses to ensure the digital files are available in the future.

4. There are no permanent electronic storage media. Hard drives, CDs, magnetic tape, or any other storage formats need to be tested and replaced on a regular schedule. Proactive management is required to avoid catastrophic loss of records.

5. The lack of a "physical" presence can make it very easy to lose track of electronic records. Care must be taken to ensure records are in controlled custody and do not get lost in masses of other data.

6. Authenticity of electronic records can be questioned, as it is easy to create and share copies. Extra security precautions are needed to ensure e-records are not altered inappropriately.

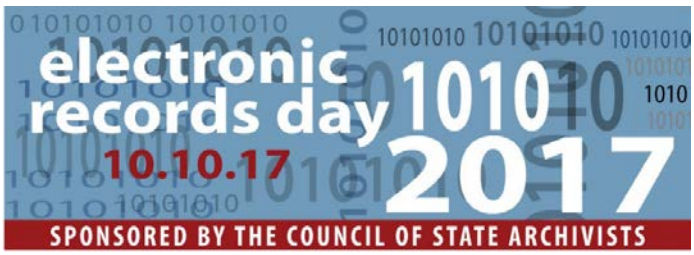
7. The best time to plan for electronic records preservation is at the time of creation. Don't wait until software is being replaced or a project is ending to think about digital preservation issues.

8. Purchasing a records management or digital preservation system will not solve all your e-records problems. Attention is needed from staff, no matter what system you purchase.

9. Electronic records create greater accessibility and ensure the rights of the public, if creators, managers, and users recognize their importance and contribute resources to their preservation.

10. While they may seem commonplace now, electronic records will form the backbone of the historical record for researchers of the future. Without proper preservation, a digital dark age will occur.

Remember, archivists are here to help tackle these challenges. Contact your state or local government archives to find out how to make electronic records accessible for generations to come.



Electronic Records Emergency Planning and Response

From the Council of State Archivists
www.statearchivists.org

Electronic records are critical to assist continuity of operations at archives, libraries, and museums in the event of emergencies. CoSA presents some core concepts and actions to aid electronic records emergency planning at your repository:

ORGANIZATIONAL INFRASTRUCTURES

- Solicit the active collaboration of senior management in formulating strategies to protect your electronic records from physical, technological, and security risks.
- Evaluate staff competencies to establish action teams responsible for the component tasks of electronic records emergency planning.
- Account for all restrictions applicable to your collections at the outset of the electronic records emergency planning process.
- Cooperate with your Records Management and IT staff at each stage of electronic records emergency planning.
- Treat electronic records emergency planning as a perpetual work in progress.

PREPAREDNESS, RESPONSE, and RECOVERY

- Assess facilities, equipment, and computer networks to expose potential risks to your electronic records.
- Prepare alternate computing sites and backup networks to deploy in the event of electronic records emergencies.
- Generate task-specific report templates to document electronic records emergency response and recovery actions.
- Include vendors specializing in electronic media and data recovery on emergency contacts lists.
- Attend disaster preparedness workshops available in your area or online.
- Consult local first responders to test your electronic records emergency action plan.

ADDITIONAL CoSA RESOURCES

https://www.statearchivists.org/programs/emergency-preparedness/

https://www.statearchivists.org/pertts/

Top Tips for Government Agencies Working with Electronic Records

From the Council of State Archivists
www.statearchivists.org

As electronic records rapidly replace paper in government business it is important for agencies to have a plan for dealing with them. These tips highlight where to start the conversation.

- **Consult your records retention schedule:** Know what retention periods have been approved and take appropriate actions (e.g. transfer to the State Archives, destroy, etc.) when the retention period for your records has been met.

- **Plan ahead in ERM system design**: Talk to archivists, records managers, and other stakeholders; determine the possibilities for system adherence to retention and disposition guidelines.

- **You've got to have standards**: Ensure you have a trusted system and that your records are authentic (see ISO 15489, ISO 16363, DoD 5015.02, metadata standards, etc).

- **Organization is key:** Who's in charge of the shared file? Are people using email as a filing cabinet rather than a communication tool? Which copy is the record copy?

- **Make the rules:** Naming conventions, file organization, version control, and disposition strategies all help now and in the long term. Ensure all staff (permanent, full-time, temporary, students, interns, etc.) know and follow the rules.

- **Do you have backup?** Does your backup system work? How well will it actually restore your e-records? Can you retrieve individual items? Test all assumptions.

- **Understand metadata:** It's the information that lets you search, retrieve, access, manage, and preserve your records. Without it a record is just a needle in a pile of needles.

- **A record is more than just raw data:** The content, context, and structure of a record give it meaning and make it usable. Metadata helps preserve these characteristics to ensure ongoing access.

- **Do you have built-in strategies?** No format, storage media, or information system is permanent. Do you have a plan for migrating records to new systems and formats?

- **Does delete mean delete?** E-records proliferate easily. Do you have a plan to manage deletion of all copies that *should* be deleted? E-discovery can grab everything that exists.

- **Think before you scan:** Standards, worthiness, naming conventions, storage, and retrieval (among other things) should be considered before you turn that scanner on for the most efficient and useful results.

Why You Need More Than Backups to Preserve Records

From the Council of State Archivists
www.statearchivists.org

"Why worry about electronic records? That's IT's job"

"If we scan everything we can get rid of the paper and solve our records problem."

"We're fine, we back everything up."

Anyone in a modern workplace has likely heard comments like these. Misconceptions abound surrounding the long-term management and preservation of electronic records. While good backups play a role, much more is needed to ensure records remain accessible far into the future.

Backups serve to guarantee short-term continuity of an organization's operations. They capture a snapshot of electronic records and other information at a certain moment in time, allowing quick restoration after data loss, system crashes, or natural or man-made disasters. They are typically run on cycles where the storage medium (tapes, hard drives, etc.) is reused after a set period of time.

Digital Preservation ensures the long-term accessibility, authenticity, integrity and trustworthiness of electronic records so that they can meet the long-term needs of operational mandates, audits, and future research. Digital preservation seeks to manage records so that they will remain usable through many successive generations of technological advancement.

Good backups are a component of any digital preservation system, as are many other aspects of a well-managed IT environment. Those are just the infrastructure surrounding the actual records, however. Digital preservation relies on a system of management where electronic records are tracked, validated, protected and migrated over time. Preservation may involve a combination of software and hardware tools and manual processes, and deals with issues of software and hardware obsolescence, security and file integrity, and the access needs of many different user groups.

Does your organization have a digital preservation strategy to deal with your long-term electronic records?

Help and advice is available from the below organizations and others. Check with your state or local archives to find out how you can move from simply backing up your records to preserving them.

CoSA PERTTS Portal: https://www.statearchivists.org/pertts/
Library of Congress Digital Preservation: http://www.digitalpreservation.gov
MIT Libraries Digital Preservation Management: http://www.dpworkshop.org/
Society of American Archivists Electronic Records Section blog: https://saaers.wordpress.com/

Ohio Electronic Records Committee
Tip Sheet

QUESTIONS FOR NEW SCANNING PROJECTS

If you determined or decided to scan your physical records, there are several questions you should answer before commencing. Some of these questions cannot be answered by those doing the scanning, but require the opinions of subject-matter experts, Information Technologies (IT), and/or management. Not all questions need to be answered to start or complete the scanning project, but are good to consider through its implementation.

OVERALL OBJECTIVE

1. What is the goal(s) of scanning these records?
2. Will this be a continuing project or a one-time project (one set of records to scan)?
3. Will this scanning project duplicate the records (meaning exist in both physical and electronic formats) or will it replace the current format of the record(s)?
4. Is there a timeframe the project must be completed?

DETAILS ABOUT THE DOCUMENTS INVOLVED

1. How are the documents used? What is their function?
2. What record series/retention schedule(s) do these records fall into?
3. Do these documents contain confidential or sensitive information, such as social security information? Can these documents be viewed by non-certified people?
4. Do these records contain historical value?
5. Are these vital records for your organization? If a disaster occurred, can business resume without these records?
6. Do the records exist anywhere outside of your department? Will they have to be pulled from storage?
7. Do you have an estimated total of the records desired to be scanned?

ASSETS NEEDED

1. Does your office have a scanner and scanning software? Or are you out-sourcing the scanning?
    a. Do you have specific requirements for out-sourced support?
2. If the documents need to be sent off-site for scanning, is everyone aware and comfortable with that? Do the records need to be retrieved within a small timeframe?
3. Will you need extra server space for these scanned records?
4. Do you have indexing, document management, or content management software to help organize and search the scanned records?
5. Who is involved in the project? Subject-matter experts? Information Technologies? Records Management?
6. Will you need extra staff or extra staff time for this project?
7. Will you need support from an outside source like a vendor? Will they be compliant with confidentiality requirements or willing to become certified with specific rules and regulations?

PRE-SCANNING PROCEDURE

1. Do the documents have to be gathered? Do the records reside in one location or multiple?
2. Will the documents have to be prepared for scanning? De-boxed? De-binding? Removing staples?
3. Do all of the records in the series need to be scanned or a select range? Will the records need to be sorted or filtered to find the relevant records?
4. Is there specific metadata that needs to be captured in the scan? Why this metadata?

SCANNING PROCEDURE

1. What scanning software will the records be scanned through?
2. What electronic media format will the records be scanned to?
3. Will this be batch scanning? Do the records have information on one-side (simplex) or two-sides (duplex)?
4. Will there need to be any prepping for the documents?
    a. Remove staples or paper clips.
    b. Remove from envelopes.
    c. Specific documents within the group of documents
5. Will metadata be captured from these scans? How so?
6. What is the quality control process planned once a record is scanned?
    a. Have staff time and resources been budgeted for this quality control?
    b. What accuracy level is acceptable?

c. How frequently will the images be audited for quality control? Daily, weekly, or percentage sampling?

7. How many people will be involved in the scanning of the records? Are they authorized to view the records being scanned?

Post-Scanning Procedure

1. Is there a manipulation requirement or editing to be done to the records once scanned?
2. How will these scanned records be identified? Will they be indexed? Will this be done automatically or manually?
3. Are there procedures in place for long-term storage of the records? Migration strategies?
4. Security
    a. Where will the document files be stored?
    b. How will documents be secured against unauthorized alteration or deletion?
    c. How will metadata be secured against editing?
    d. Will documents have redaction applied?
    e. Who will have access to the documents?
    f. Will access be given to all that need it? How? (Individual, portal, other)
        i. Consider monetary costs, time, effort, infrastructure upkeep
    g. What other controls will be put in place to guarantee the scanned document is an accurate and reliable representation of the original paper document?
5. Are the original copies of the scanned records being destroyed or returned to storage?
    a. If returned to storage, why?
    b. How long do you need to keep the original now?
    c. Does the retention schedule take into account both the original and scanned versions of the records?
6. Have you verified you are keeping a backup of your electronic documents?
    a. How are they being backed up?
    b. What is the retention of the backup after the documents are deleted?

Ohio Electronic Records Committee
Tip Sheet

PAPER V. SCANNING COST COMPARISONS

There are many costs to consider with either maintaining records in paper or electronically. This cost comparison chart helps list some of the known and unknown expenses one might deal with when either storing or scanning records.

Paper Storage	Scanning to Digital Images
Storage Space Costs: • If owned – maintenance costs • If leased – leasing costs	Purchasing of scanning equipment and supplies or cost for outside vendor to do scanning
Expense for transporting to Off-Site Storage Location	If purchasing scanning equipment, cost of scanning software for purchased scanner
Shelving Expenses • Employee time to prepare records in folders or boxes, place records in file room or in storage, and add records to index • Charge from storage vendor to pick-up and inventory records in their off-site warehouse and inventory system	Expenses for training staff
Retrieval Expenses: • Employee time searching for records (online or over the phone) • Charges from storage vendor to retrieve and deliver records; potential for higher rate due to the delivery speed	Annual equipment maintenance expenses and possible contracts
• If electronic records storage system is used, cost of software program to access system	Salaries and benefits for scanning staff
Expenses for compliance with storage standards for paper: • Temperature control • Humidity control • Proper boxing • Review for brittleness or fiber breakdown	Expenses for server space: • General Server Space to house digital images • Backup Server Space for disaster recovery
Expenses for security of confidential records: • Background checks on storage vendor to meet compliance • Prep or pull confidential files in records to be sent to storage	Expenses for compliance with storage standards for digital records, such as: • Temperature control • Humidity control
Expenses for review and destruction of paper records once retention has been met	Contract expenses, scan-on-demand, or retrieval fees for storing digital images off-site
Salaries and benefits for file clerks to work in file or storage rooms	Expense for purchase of records management software for storing, preserving, and viewing images
Time spent finding and retrieving records for business purposes	Expenses for removal and destruction of scanned paper documents after scanning is completed
	Expenses for review and delete of scanned images once retention has been met