



DIGITAL
BEST PRACTICES
SERIES

An illustration of several hands of different skin tones (teal, light skin, dark skin, brown skin) pointing towards a central white circle. The hands are wearing various accessories like a watch and a bracelet. The background is a solid dark blue.

SERI
State Electronic
Records Initiative

NUMBER 1.
**Digitization
Projects**

CoSA and the
State Electronic
Records Initiative

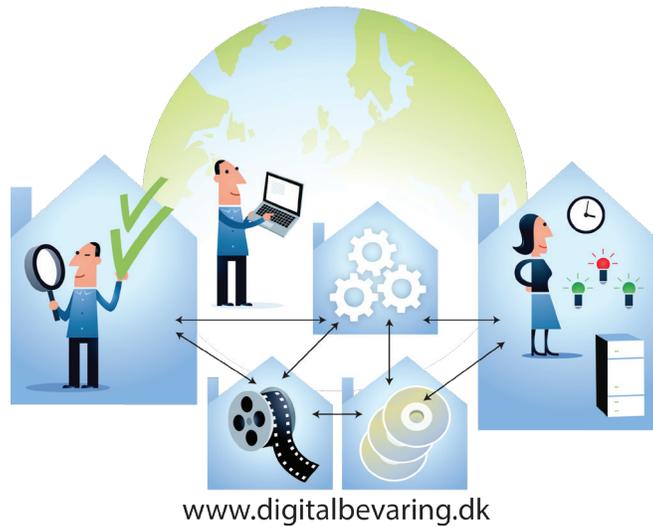


Table of Contents

Overview	page 1
Create a Project Plan	page 2
• Pre-Project Planning	page 3
• Background	page 4
Prepare and Execute the Project Plan	page 8
• Project Planning	page 9
• Project Management	page 11
Summarize, Synthesize, and Learn	page 12
• Post-Project	page 13
Appendix	page 17

Overview

The Tools and Resources Subcommittee of the Council of State Archivists presents a three-part module on the best practices for managing digitization projects. The decision to digitize records and the choice of a method to do so are not as simple as putting an item on a scanner and pressing go; to be highly successful, this process requires thoughtful research, preparation, and studious project management.

This document is organized into three broad categories. Each category includes the strategies and best practices of highly successful digitization projects. Though the parameters for each project will differ greatly — budget and resources, source and amount of funding, type of material to be digitized, descriptive requirements, preservation activities — these best practices will produce a project management framework that is flexible enough to be applied to projects of all sizes and scopes.



Pre-Project Planning: Lay a strong foundation that will lead to project success.

Create a Project Plan.



Project Planning and Management:

Prepare records, staff, and facilities for the upcoming digitization project. Determine practical logistics, document workflows and procedures, and follow up with quality control and quality assurance.

Prepare and Execute the Project Plan.



Post-Project: Document project activities, costs (financial and staff time), and lessons learned, and refine processes for future projects. Continue to preserve and provide access to digitized materials for the long-term.

Summarize, Synthesize, and Learn.

Create a Project Plan.



www.digitalbevaring.dk

Pre-Project Planning:

Lay a strong foundation that will lead to project success.

Pre-Project Planning

Pre-project planning is often documented in a **Project Plan**. A well-formed plan establishes the vision and goals for the project, summarizes key points of historical or referential context, identifies stakeholders, addresses any areas of concern or risk for the long-term preservation of and access to digitized materials, and communicates in broad strokes the overall plan for the project. While this document can be formally chartered as a plan or informally put together, it's an important organizational resource. The project plan is a communication tool which demonstrates to key stakeholders (especially institutional leadership and financial backers) that the project has been well thought-out and will be successful. An approved and fully-supported plan secures organizational buy-in; this can be critical for multi-year projects which might see shifts in leadership or priorities.

Not every project plan will be identical, but many will follow a similar template, as laid out here.

Background

- What do you have?
- Why is this project necessary?

Scope of Project

- What are you trying to do?

Identification of Stakeholders

Budget Estimates

- Vendors or In-House
- Equipment, Supplies, Etc.

Staffing

Plan of Work

- How will the project proceed?
- Timetables

Risks

Summary and Conclusions

Background

At the foundation of any digitization project is its purpose. Why is this project being done and why is it being done *now*? These questions will inform every aspect of the project. It may sound simplistic when reduced to such basic elements, but the foundation of your project will be built upon answering the questions: “What do you have?”, “What are you trying to do?”, and “Why are you doing it?”.

What do you have?

Establishing the scope of your project will inform how your project is built. Records exist in context, and being able to articulate that context clearly and concisely grounds all participants in the provenance of the records: the circumstances of their creation, their physical characteristics, including quantity and condition, the state of their physical housing, and more. Additionally, pulling together data on how the records are used today, and considering how these records will be used in the future, can provide a substantial amount of direction. Specifically consider the following elements:

What are you trying to do?

Setting realistic, achievable goals bounds the scope of the project. Analyze the information you’ve gathered. Knowing what types of materials you have helps determine what the parameters for digitization will be (e.g. higher resolution for photographs than for documents, perhaps). Informed awareness of how collections are used helps determine whether access copies are needed and what formats designated communities will be able to use.

- **Physical Characteristics:** What types of material are the originals in/on (vellum, parchment, paper, cassette, open-reel audio, acetate film, etc.)? What additional specifications need to be known (reel size, simplex/duplex, etc.)?
- **Quantity:** How many records are there? Number of boxes, approximate number of items per box, etc.
- **Preservation Concerns:** How fragile are the items? What special handling procedures are needed to manipulate these records? How would these records respond to being moved or shipped? How would they need to be packed?
- **Description:** What metadata exists to describe these records? Do they have individual descriptive or catalog records? Are you using a widely-adopted schema (MODS, DC, etc.) or a custom one?
- **Access:** How frequently is the collection used and by what audience? Will services be disrupted during the course of the project? If so, how can that disruption be minimized?

Why are you doing it?

You must be able to articulate your motives for digitization. Usually the answer to that question will be to improve access to collections, but be as specific as possible. Some records might not stand up to continued use. Others may no longer have a suitable playback mechanism. Others still might be poorly organized and reformatting and arrangement are necessary in order to actually present the appropriate context. These motivations will be the crux of the case you make to those who will authorize and support your project.

Stakeholders

A stakeholder is any person or organization who has a vested interest in the success of the project. Most archival collections are in the custody of institutions: public libraries and archives, agencies of state and local governments, historical societies, universities, and others. These institutions have priorities and their parent institutions have priorities, and so on. Identifying stakeholders in the project plan and acquiring their approval (if necessary) helps ensure that the project will be a success. Stakeholders can provide valuable input or insulate the project from changing institutional priorities or budgets, so their buy-in is essential.

- **Executive Stakeholders:** Executive stakeholders are those with authority over organizational priorities, budgets, and staffing decisions which can often shape the direction of a digitization project. Think about who these people might be in your organization. How many 'levels' will you need to seek buy-in from? This is important to consider as priorities change, funding and staff levels wax and wane with budget cycles, and projects become vulnerable to organizational shifts. A well-informed, committed, and satisfied set of executive stakeholders insulates projects from the vagaries of shifting priorities.
- **Other stakeholders:** The users of your collections are another stakeholder set you should consider — perhaps these stakeholders include members of the public, a public agency, or a niche community. Understanding the needs and priorities of your audience and other stakeholder groups informs the project and ensures that goals are clearly defined and met. Furthermore, stakeholders, especially those with similar missions, can be allies and collaborators.

Cost Planning

It is important to understand your budgetary requirements, as well as the expected costs of the project and how these two can be effectively reconciled. Consider the staff time required to organize and prepare materials for the digitization process, outside vendor costs, shipping costs (if applicable), and the cost of materials needed either to scan in-house or to prepare for off-site digitization, among other factors.

- **Budgeting:** A significant part of the project planning process is the estimation of budgets – staff time, benefits, and money spent to accomplish the project. There will often be supplies, shipping, vendor and consultant costs, and more to consider. Plan for overage (to cover unforeseen expenses) as well. Many granting organizations will require that detailed budgets be submitted as part of the grant proposal.
- **Grants:** Grants are the primary source of funding for many digitization projects. Granting organizations have high standards for recipient organizations with regard to preparedness, demonstration of proficiency, and overall likelihood of project success. Many granting organizations will want to see a fully fleshed-out project plan, identification of key personnel involved in the project and, potentially, substantial experience with such projects depending on the size of the grant. If grant funding is secured a grantee might face periodic audits or be required to submit progress reports. Accurate tracking of expenses is always important, but there will be additional scrutiny when cost-sharing is split between the grantee and grantor. Staff time devoted to the project will need to be closely tracked and billed specifically to the grant or separated from normal operating expenses to clearly indicate cost-sharing.

Risks

Every project has risks. Understanding, addressing, and minimizing these risks is an essential project management task. The rigors of the digitization process – scanning, shipping, handling, quality control – can introduce risks to unique resources, risk factors greater than those experienced by records sitting securely on a vault shelf. In addition to any risks introduced in the technical process, the project itself has risks. As mentioned above, funding sources dry up and administrative priorities change. Any granting stakeholder will require such financial risks be addressed – ensuring that the project endures in an uncertain world is of the utmost priority.

- **Document:** How likely is the risk to occur? How damaging to the project's success would that be? Consider creating a risk analysis matrix outlining and weighing the various risks to the project to allow stakeholders to determine how much to invest. Signaling the likelihood of risks and their potential impact helps communicate to stakeholders the ways in which the project can fall short of its goals.
- **Mitigate:** Develop plans to mitigate or minimize the effects of particular risks. Communicate these risk mitigation steps to stakeholders.

Specifications

Each project will vary greatly in terms of technical needs when it comes to digitizing different types of materials.

- **Technical specifications:** Each type of material will present its own challenges, and each will have a myriad of different parameters that will affect the final outcome of the digitization project. A paper document, for example, is likely to have fewer technical requirements for digitization than a high-resolution photograph or a microfiche card. There are too many technical guidelines to itemize here, but you can visit the [PERTTS Resource Library](#) to keep up with the most recent and professionally accepted standards for all types of materials.
- **Destination specifications:** What is the final output of your digitization project? Are you simply making access copies or do you want multiple versions at different levels of preservation and production quality? How will your files be described, with embedded metadata or with metadata definition files? How will the files be arranged when delivered and completed? In what format(s) will they be? What naming standard will be used?

Implementation

One of the more challenging decisions in a digitization project is choosing whether to perform the digitization in-house or to contract out to a professional vendor or peer institution (e.g. a university with a digitization lab). Think about the following:

- **In-House:** Do you have the necessary expertise (technical, project management, etc.)? Do you have the necessary equipment? How much time and funding would be required to acquire both? How secure are in-house resources (e.g. what would happen if skilled staff moved on midway through the project)?
- **Outsource:** Draft a Request for Proposal (RFP) that documents your digitization requirements. Solicit multiple vendors and compare their procedures, experience, and offerings. Specifically, ensure that they have experience digitizing materials such as yours, experience handling fragile records, and the technological expertise to be able to accomplish the tasks at hand with limited supervision within your required timeframe. Ensure that storage and transfer mechanisms are secure.

Prepare and Execute the Project Plan.



www.digitalbevaring.dk

Project Planning and Management: Prepare records, staff, and facilities for the upcoming digitization project. Determine practical logistics, document workflows and procedures, and follow up with quality control and quality assurance.

Project Planning

Now that you've set your project up for success by creating a project plan, your institution needs to do some preparatory work to ensure the digitization process runs smoothly. Proper preparation will save money, reduce unforeseen problems, reduce anxiety, and clearly communicate expectations and timetables to all stakeholders.

Prepare the Records

Typical archival arrangement, description, and processing differs significantly from the preparation required for digitization. Most archival collections are arranged to facilitate access and use, not the systematic conversion of records from one format to another. Think about the following and determine what work you will need to do to prepare the records for digitization:

- **Physical preparation:** Depending on the nature of the equipment used for digitization, physical items may need some preparation. (e.g. whether a scanner with an automatic feeder will be used and whether staples or paper clips will need to be removed. Other processes might require re-spooling of reels, cleaning of materials before reformatting, etc.). If you are using a vendor, work closely with them to ensure that expectations are clearly communicated and met.
- **Arrangement:** Typical archival processing involves the bulk arrangement of items in boxes and series. The product of a digitization project, however, will likely be individual files (PDFs, TIFFs, WAVs or BWFs, etc.). Consider data gathered during the planning process concerning your community's use of the records; this should inform your decision on the most useful or desirable output of the digitization process. Is there a particular way that you will want to order your records for digitization or a way you wish individual files to be arranged after digitization? Is everything being digitized or are you digitizing only a portion of the records?
- **Description:** Gather known information about each item, the series or collection, and add additional information during the preparation process. It will be helpful to uniquely identify each object to be reformatted so as to be able to connect any digital file to its source master record. Ensure that the destination system for digital files can support whatever metadata format you choose to utilize.
- **Packaging and Shipping:** If project work is performed off-site, care will need to be taken to ensure that items are not damaged during transit and that they are stored in a physically secure location during the scanning process. Manifests for shipping containers should include a detailed inventory, including names of folders, reels, etc. Thoroughly research the shipping costs associated with transfer of materials. If using a third-party shipping vendor, keep receipt slips detailing the date the shipment was sent and received and sign offs by all parties. Any change in custody should be logged fastidiously.

Staff

Regardless of whether you perform the digitization work yourself or outsource it, some in-house staff will be working to ensure the project moves forward.

- **Project Manager:** This might be your Principal Investigator (PI) if you have a grant, or it may be someone in the organization with project management experience or a veteran staff member who has contributed to digitization or other large-scale projects in the past. The project manager should be a strong, detail-oriented, efficient staff member who is capable of directing the project. Project management does not have to be a full-time job, but it will take a significant amount of time, effort, and organizational skill. Keep in mind that some aspects of project management might not come naturally to staff who are trained archivists, librarians, or technical experts. Ensure that staff members have the necessary project management skills, even if training needs to be sought or provided. Organizations like the [Project Management Institute](#) offer training materials and certifications for what can be an incredibly complex and demanding job. This is not a responsibility that can be tacked onto an individual's regular duties, nor is it something that can be done in an hour per week. Project management requires a significant investment of time and knowledge.
- **Additional In-House Staff:** In addition to the project manager, other staff members may be part of the project team and contribute to the project effort. This may include assisting in preparing materials for scanning, packing and shipping materials, or performing the digitization themselves. Estimate the amount of staff time needed well in advance, assign staff with specific skills to appropriate project areas, and communicate expectations and timetables clearly and consistently.
- **Communications:** Both stakeholders and staff should be kept well-informed of the project's goals, timetables, and progress at all times. You may consider using project management software or collaboration tools to keep track of deadlines and provide a central area for project updates. Ensure that materials queued for digitization are not moved or removed by someone who may not be aware of the project. Good communication prevents easily-avoided mishaps.

Plan for Post-Digitization Management

When the digitization process has been completed you will have two sets of records: the analog originals and the newly created digital files. Think about:

- **Originals:** Will the originals be retained? What access restrictions might now be placed on fragile analog masters? If sent out for digitization, how and when will the originals be returned? Will they be returned at all or will the vendor destroy them after reformatting? How will staff confirm that nothing was lost or damaged in transit or during the digitization process? If physical preparation requires rearrangement, will records need to be returned to their original arrangement?
- **Digitized items:** How will digital copies be stored and managed? Is extra storage space needed and will there be added costs for additional storage? Will new software or hardware be needed to store or access these new items? Does storage or software need to be acquired before digitization begins? Did you migrate to a format that might itself need a migration in the future? How will these items be cared for in the long-term?

Project Management

The day has come for the project to begin! You've gathered your requirements, prepared your records, and selected a vendor or in-house staff to perform the work. Everything is planned to the last detail: timetables have been set, risks have been researched and minimized, workflows and processes checked and double-checked. Now, how do you actually manage this thing?

Leadership and Direction

The project manager will be responsible for the coordination of communications between various parties, progress reporting, maintaining timetables, resolving questions and minor issues, and generally directing the pace and course of the project. Everything should flow through one central point of coordination and control to reduce confusion and ensure that all participants operate in sync.



Workflows and procedures

Regardless of who is performing the digitization work, it is wise to be detailed and explicit in your instructions and specifications. *Make NO assumptions!* One should absolutely solicit advice and recommendations from vendors, outside stakeholders, and others, but ultimately you must ensure that your process and finished product meet your own requirements (e.g. if you want multiple copies as deliverables you need to specify this.) Unclear instructions can lead to delays, poor products, and even damage to original records. The following suggestions may assist you in this process:

- **Communication:** Keep a clear line of communication between the vendor contact (or in-house contact) and the project manager. Paying attention to the project's progress ensures that any issues can be addressed immediately, reducing delays and the potential for more serious issues. Require regular status reports or updates so the project manager is clued in early if delays or issues arise.
- **Description:** Clearly indicate who will be describing objects, and how. What metadata will be captured or cataloged about each individual item (if any at all)? Clarify the method used to describe important aggregation levels (e.g. series, collection, record group, fonds, etc.)? What taxonomies or controlled vocabularies are being used and from where are those sourced?
- **Digitization Workflows:** The entire workflow should be thoroughly documented from inception, through digitization, quality assurance, finalization, packaging, and delivery. The digitization workflow should remain consistent throughout the project, but should be flexible enough to account for occasional abnormal circumstances (a damaged item, for example). Individual procedures can be tweaked and changed as time goes by, but each should be considered as part of the overall workflow to ensure consistency.

Quality Control and Quality Assurance

Periodic checks should be made during the digitization process to ensure that items are being digitized to specifications. Additionally, regular checks should be made to ensure that no errors are made or flaws introduced in the digitization process. Any contract with a vendor should include quality assurance (QA)/ quality control (QC) stipulations and requirements.

- **Quality Assurance:** Quality assurance entails confirming that workflows and processes are as efficient and effective as possible. Many of the details related to quality assurance should be worked out before the project kicks off. After the project gets underway, however, the stakeholders may learn that some of their initial assumptions were inaccurate. Processes may need to be refined in response to external pressures or events, and continual refinement of process should be built into workflows and procedures wherever possible. Document these changes thoroughly. Monitor vendors closely to ensure that milestones are being met.
- **Quality Control:** Ensuring the product is created and/or delivered to specifications is of the utmost importance. Vendors should have thorough quality control processes in place. In addition, organizational staff under the direction of the project manager should implement their own quality control standards and processes. When batches of items return from vendors it is good practice to survey 10-20% of the items, checking for transcription errors, failed reformats, corrupted files, mismatched or otherwise erroneous metadata, and more. Be sure to build quality control into the process, checking periodically, especially early in the process, to catch major issues immediately rather than after the entire project is completed.



Summarize, Synthesize, and Learn.



www.digitalbevaring.dk

Post-Project: Document project activities, costs (financial and staff time), and lessons learned, and refine processes for future projects. Continue to preserve and provide access to digitized materials for the long-term.

Post-Project

After digitization efforts are completed, the original records have been returned safely, the digital files have been delivered, and vendors are finalizing their contracts, what needs to be done to close out the project? It's time to compare your initial plans and estimates with how things actually turned out. How successful was the project overall?

Accounting

Document the costs of the project including staff time, material costs, shipping and handling, any costs incurred by vendor contracts, and so on. Costs may include buying new or upgrading existing equipment and upgrading and maintaining infrastructure for long-term storage.

It is also good practice to keep track of the amount of staff time spent on a digitization project. Many grant awards require cost-sharing and cross-utilization of resources between the grantee and the grantor; be sure to accurately account for this during the project closeout, as poor accounting may result in damage to the organization's reputation and ability to secure funding for future projects. Try to track staff time and expenses separately from normal operating expenses.

Ensure that bills are paid on time, that contract stipulations are met, and that both accounts payable (e.g. costs) and accounts receivable (incoming funds from grants or other supporters) are fully reconciled. If there were cost overruns, a thorough documentation of the reasons will aid in any post hoc justification or request for additional funding.

Lessons learned

Document what went *right* and what went *wrong* during the project. Even small issues that arise can be informative for future projects. Think about the following questions.

- **Was the project successful?** Were the goals of the project met? Was the product delivered to specifications? Which aspects of project management went well and which went poorly? Did the project come in under or over budget, both financially and time-wise?
- **What could be done better in future projects?** What was learned during this project? What could have been done better? What might make the process go more smoothly next time? Which areas could be refined?

Finalize documentation

Gather all the documentation compiled during the project, such as project plan, contracts with vendors, shipping manifests, schedules of digitization, budgets, etc. These materials should be maintained for a specific amount of time as reference materials. It is especially important to keep all accounting and project management records in accordance with whatever legal and business requirements to which your institution may be subject, especially if grants supported the project. For example, the Federal government has strict requirements on how long documentation must be kept for auditing purposes.

It may be useful in the case of a grant to create a **Final Report** that provides a full accounting of all aspects of the project, including any issues that may have arisen that might have affected quality, completeness, timetables, or other factors. Closing the project with a final summation helps ensure the provenance of both the physical and digital records — providing a kind of “final summary” for the physical objects and an inception of life for the digital objects. Such documentation may prove useful in future years as additional projects are considered; a successful past project might serve as an exemplar, or the same set of records might have additional digitization needs. Understanding the provenance of all holdings provides crucial context to those decisions. If grant funding was secured, a grantor will typically require a final report of the project, including final financial reports and an account of all spending. If contracts with vendors were signed the contract file will need to be updated with relevant financials such as invoices and statements of work.

Sustainability (Long-term Management)

Though the project itself might be complete, you now have multiple sets of records to manage. Follow through on the long-term sustainability plans developed in the project plan. Incorporate project documentation and provenance into pre-existing collection or asset-management tools that your institution might already be using. Ensure that the project's product continues to be useful into the future.

Summary

While the true product of the project is the digitized records, the final report is the official document that outlines the project from beginning to end. No project will be without its own issues, and this conclusion serves as a signpost which future project managers can use as a guide — of what to do and what not to do. The project itself is not complete until both the originals and the new digital copies are managed appropriately, the financial paperwork is completed, all issues addressed, and stakeholders satisfied.

Resources:

PERTTS Portal Resource Library: <https://www.statearchivists.org/resource-center/resource-library>

Federal Agencies Guidelines for Digital Initiatives: <http://www.digitizationguidelines.gov/>

ALCTS Minimum Digitization Capture Recommendations: <http://www.ala.org/alcts/resources/preserv/minimum-digitization-capture-recommendations>



Council of State Archivists

Formed in 2002, the Council of State Archivists (CoSA) is a national nonprofit that facilitates networking, information sharing, and project collaboration among the 50 state, 5 territorial and the District of Columbia archives. CoSA's 56 members are the heads of their agencies and manage combined budgets of nearly \$150 million annually, authorize departmental purchases, and influence statewide spending. Their agencies are responsible for protecting the rights and history of the American people across our country.



State Electronic Records Initiative (SERI)

Responding to the explosive growth of electronic records, CoSA began the State Electronic Records Initiative (SERI) project in 2012 to address their long-term care and access. SERI provides critical training to the state archival community in electronic records management and preservation. CoSA administers the online PERTTS Portal with open availability to information, resources, and training opportunities. Funded initially with grants from the Institute of Museum and Library Services (IMLS) and the National Historical Publications and Records Commission, CoSA continues electronic records management and digital preservation education and development of best practices documents for use by allied organizations.



This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.

Council of State Archivists
PO Box 2508
Albany NY 12220-0508

Voice: 518-473-9098
Fax: 518-473-7058
Email: info@statearchivists.org

August 2017

Illustrations courtesy: www.digitalbevaring.dk
Cover: Adobe Stock
Design: Lori Hansen