

What will it cost?

An integral part of any digitization project is estimating the costs associated with the various processes involved and making decisions on how to carry out those processes based on the materials in your collection and your budget.

In digitizing a collection the largest expense will not be the actual digital conversion, but what needs to happen before and after the scanning or photography. Reviewing and assembling source material, preparing it for digitizing (transportation of large or heavy objects, disbanding manuscripts, conservator checking of objects for damage, etc.), tracking the material, quality control and ongoing maintenance all require staff expertise and time.

The following components of a digitization project must be included when calculating your project's total costs:

- Documentation
- Material or capital costs, including equipment, hardware and software, scanning equipment and image manipulation software
- Equipment costs for image capture, digital image storage, and maintenance of digital images
- Human resources; either hiring new or training existing staff
- Sufficient space and facilities for equipment and any necessary new staff
- Transportation and handling of objects to be photographed or images going to an outside source (mainly for two-dimensional objects — costs will be higher for three-dimensional objects)
- Insurance costs related to transportation
- Set-up time
- Photography and/or treatment of current photographs
- Film processing and/or scanning
- Quality control
- Image manipulation, i.e., adjusting images for their intended purpose
- Software licenses, copyright clearances and user fees
- Ongoing maintenance

To get an idea of the actual and estimated costs associated with these various digitization processes, go to Steve Puglia's article, [The Costs of Digital Imaging Projects](#) and the [RLG Tools for Digital Imaging](#) developed by Cornell University to assist RLG's (Research Library Group) member institutions. The tools include a worksheet for estimating reformatting costs, guidelines for creating a Request for Proposal for digital imaging services, and models for both a Request for Information and a Request for Proposals.

One of your major decisions when planning and budgeting for a digitization project will be whether to outsource the project or do it in-house. This decision depends on several factors, including:

- Types of source materials in the collection to be digitized
- Expertise and availability of staff to do the work
- Equipment on hand and its ability to handle the digitization of the particular types of materials in the collection
- Space needed to carry out the image conversion
- Budget

Outsourcing the Project

If your staffing resources and expertise are limited, outsourcing may be your best option. This is particularly true if the source materials require special digitizing equipment that would be expensive and impractical to purchase for a one-time project. You must also consider the time it will take to train current staff to master the technology required for a digitization project and the space available at your facility.

Issues & general cost estimates

The types of materials in your collection will best determine whether or not it would be advisable to hire an outside company to do the digitization. Keep in mind that finding a vendor to digitize materials of similar format and size is much easier than finding one experienced with archival standards or materials that may be rare or fragile.

Not only will the type of source material affect your conversion costs, but within the same type of material, size and resolution must also be taken into account. Sending large or three-dimensional materials to an outside vendor adds shipping and handling fees as well as transportation-related insurance costs.

When working with an outside vendor, be sure to concisely spell out contract specifications for the digital service provider, stressing the importance of consistency in the products delivered and any administrative metadata required. This last task can become expensive, especially if individual metadata are required for each specific image.

An alternative to sending materials out is to have a vendor do the digitizing at your institution. But this again depends upon the type of equipment needed for the conversion.

Also consider the possibility of sharing resources such as equipment and staff with another institution to cut costs.

Outsourcing Pros

- Pay for cost of scanning the image only, not equipment or staffing (lower labor costs)
- High production levels
- On-site expertise
- Limited risk
- Vendor absorbs costs of technology obsolescence, failure, downtime, etc.
- Variety of options and services

Outsourcing cons:

- Institution has less control over imaging process, quality control
- Complex contractual process: image specifications must be clearly defined up front, solutions to problems must be negotiated, communication must be open, and problems must be accommodated
- Vendor may presume a level of understanding on part of library/museum/archives that they may not have
- Lack of standards with which to negotiate services and to measure quality against
- Originals must be insured, transported, shipped, and then also handled by vendor staff
- Possible inexperience of vendor with library/archival/museum/historical society communities
- Instability of viability of digital service providers

In-house Production

Equipment

Two reasons for keeping the digitization process in-house is gaining expertise for permanent staff and having control over the project. Costs associated with an in-house project may include training current staff, hiring new staff and buying new equipment.

The decision about whether or not to do the image conversion in-house will largely depend on the type of source materials to be digitized, the technical expertise and size of your staff, the equipment required and the in-house space available. For example, three-dimensional or unusually shaped objects will require quite different digitizing equipment from standard-sized paper documents that can be fed into a flatbed scanner. Purchasing specialized equipment to digitize unique source materials can be a big investment for an institution, especially if the project is a one-time event.

Kodak PhotoCD – Although not really a piece of equipment as those described above, this technology produces a CD on which images are stored in the Kodak ImagePac format (PCD), providing high-resolution digital files. PCDs can be edited and saved in different formats such as JPEGs for Internet use.

Image Manipulation Software should also be considered as equipment. Programs such as Adobe Photoshop can actually enhance poor images that are digitized. However, it is important that a trained expert be involved in any enhancement process undertaken since unique aspects of the original object can be lost in the translation.

Staffing

Digitization projects require a combination of skills from a variety of staff with different areas of expertise. The following areas and skills may be important to any digitization project:

- Technical skills/staff
- Project management skills
- Database development and administration skills
- Cataloging staff/skills
- Computer programming skills
- Web design skills
- Subject matter specialists (curators, archivists, scholars, librarians, faculty, etc.)
- Preservation background
- Photography background
- Artistic/graphic design skills
- Interest in the subject matter that the digitization project may encompass

In reality, many digital imaging projects will not have dedicated staff working on the project, but will utilize existing staff from other areas in the organization, student assistants, or volunteers. It may benefit the project to look at "transferable skills" that staff members may already possess that would be useful in any digitization project. Sufficient time for training, and opportunities to receive further education and training, should also be provided. Sometimes, recruiting capable interns from a nearby technical school or community college to do the actual digitizing or image manipulation will work.

Bringing in an outside photographer or using an experienced staff person to do the photographing and then sending the film out for processing on Kodak Photo CDs is another option. Photo CDs are a good compromise between outsourcing and digitizing in-house with the images being captured at your facility, but digitized elsewhere. Through this hybrid approach, the institution retains complete control over the source material but engages the expertise of an outside vendor to produce a professional high-resolution image.

Even if the project is being out-sourced or skilled staff brought into your facility to do the digitizing, it is important that permanent staff become familiar with digitization processes and technology so that when the project ends, an in-house level of expertise remains.

Maintenance

Once the conversion is complete, the digital products become the responsibility of the institution, so it is critical when budgeting for a digitization project to take into account long-term maintenance costs. These costs include the costs of storing your collection and making it permanently accessible to your audience.

Designing and building an image database system, maintaining the hardware and software needed to store the images, maintaining and updating the images themselves (future migration due to the introduction of new technologies), and keeping the associated metadata current, all need to be included in the project budget.

To make your digital collection accessible to your audience, a Web site will be necessary. This can be either an existing site, or a new site that needs to be built. Either way, you will need to budget for in-house staff time or the hiring of an outside service to design and develop an interface that allows users to search, retrieve and manipulate your collection to meet their information needs. Writing and organizing content and hosting, maintaining and updating the site must all be included in the budget.

Disk storage space on a server for both the archival copies, which may be large files, as well as screen copies, must be obtained or made available. Qualified technical staff will be needed to maintain and update the hardware and software associated with image storage and to revise metadata when necessary.

Maintaining collection security, paying annual software maintenance, license fees and any use fees must be budgeted for as well.

In-House Pros

- Development of digital imaging project experience by "doing it" (project management, familiarity with technology, etc.)
- More control over the entire imaging process as well as handling and storage of originals
- Requirements for image quality, access, and scanning can be adjusted as you go instead of defined up front
- Direct participation in development of image collections that best suit your organization and users
- Security of source material
- In-house expertise with archival standards and handling of rare or fragile materials

In-House Cons

- Requires large initial and ongoing financial investment in equipment and staff
- Longer time needed to implement imaging process and technical infrastructure
- Limited production level and space
- Staffing expertise not always available
- Institution must accept costs for network downtime, equipment failure, technological obsolescence, data loss, training of staff, etc.
- May have negative impact on other institution activities

Sources and Resources:

[*RLG Tools for Digital Imaging*](#)

[*The Cost of Digital Image Distribution, The Social and Economic Implications of the Production, Distribution and Usage of Image Data*](#) (Final Report)

[The Colorado Digitization Program Web site](#)

[Cornell University Library's Digital Imaging Tutorial](#)

[*Selecting a Scanner*](#)

[*In-House Digitizing Option*](#)

[Outsourcing Digitization](#)

[The Costs of Digital Imaging Projects](#)

[Conservation Implications of Digitization Projects](#)