

Information Management Resource Kit

Module on Digitization and Digital Libraries

UNIT 4. CREATION AND MANAGEMENT OF DIGITAL DOCUMENTS

LESSON 6. SPECIAL CONSIDERATIONS FOR DELICATE AND HERITAGE DOCUMENTS

NOTE

Please note that this PDF version does not have the interactive features offered through the IMARK courseware such as exercises with feedback, pop-ups, animations etc.

We recommend that you take the lesson using the interactive courseware environment, and use the PDF version for printing the lesson and to use as a reference after you have completed the course.

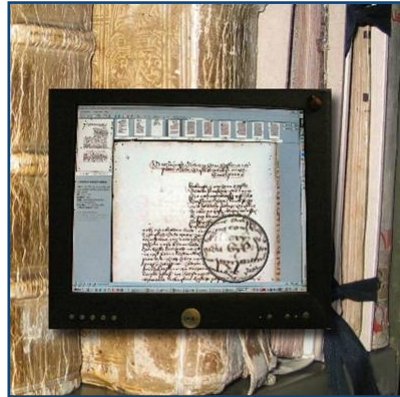


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Learning Objectives

At the end of this lesson you will be able to:

- understand the role of digitization in preserving rare and delicate documents; and
- identify the practices needed in handling rare material before, during and after digitization.



Introduction

Delicate and heritage documents risk disappearing: this means loss of our cultural memory!



A library contains different kinds of documents: books, journals, newspapers, old manuscripts, etc. It may also include rare heritage documents.

Some of the highly used books, as well as other rare manuscripts, can become very fragile.

How can we avoid the risk of their deterioration?

Introduction

Digitization of delicate materials provides a good solution for preservation.

In fact, it allows delicate materials to be excluded from every day physical use which:

- stops deterioration to originals caused by usage;
- allows better preservation of originals; and
- provides wider access to digital versions of unique or rare items, thus democratizing access while contributing to the creation of new knowledge.



General technological approach



When considering digitization as a proposed method of preservation: which of these comments do you agree with?

Through digitization, all original documents in our archives will be replaced by digital copies. The advantage is that we only will need to preserve digital materials.

Digital copies will be used for accessing documents, but original materials also need to be preserved carefully. This will double our workload!

It is true that we will need to preserve originals as well as digital materials, but in this way the preservation of original documents will be easier and more efficient.

Select the answer of your choice

General technological approach

Let's consider the process of digitization. When this process deals with delicate and heritage documents, a series of special considerations must be taken into account.

This is valid:

BEFORE DIGITIZATION

DURING DIGITIZATION

AFTER DIGITIZATION

Let's have a look at each of these stages...

Before digitization

First, in **selecting the documents** for digitization, you should choose:

- those which are widely used, because they contain important information
- damaged documents, and
- the most often requested out on loan.

To be able to do this, you must know and co-operate with your community for which you will organize digital access.

BEFORE DIGITIZATION



You should co-operate with your community:

- in the selection of documents in order to create a homogeneous digital library,
- in setting up the parameters of digital files such as resolution, colour depth, or compression ratio,
- in the development of appropriate and useful access tools, and
- in involving other institutions in the digitization programme to bring into the digital library similar and widely requested documents.

Before digitization

When handling materials, you need to work closely with **preservation specialists**. What can they do for you?



BEFORE DIGITIZATION

We survey all documents before they are digitized. If necessary we undertake a preservation treatment. We also provide you with guidelines to follow for handling the documents during digitization.

Before digitization



BEFORE DIGITIZATION

Co-operation with preservation specialists will ensure that you purchase or develop equipment or methods that will enable the correct and careful manipulation of documents to be digitized.

In fact, you should collaborate with all those interested in preservation of and research on delicate and heritage documents.

Researchers should be involved in your work as well: they will probably show an interest in the project and could warn you about problems resulting from inappropriate handling.

During digitization

The biggest enemy of delicate materials is the sudden change of environmental conditions. This happens **when you move the materials from a stable storage environment to your digitization centre.**

The materials may then change their original form, for example, physical modification and movement of parchments may result in the accelerated embrittlement of the acid paper.

If materials for digitization are transported from remote storage facilities, ensure appropriate **climate control during transportation.** You may have to use special climate controlled vans.



To minimize the **security dangers**, you should use, where appropriate, an intermediate format on another media, e.g. **microfilm**. In this way you preserve the original and digitize the intermediate format. The careful handling then refers to production of the microfilm.

During digitization

Careful manual handling is not enough. You also will need **special equipment** in order to control the **climate in your digitization centre.**

The **temperature and relative humidity** at the digitization centre should be the same as at the permanent storage environment. You should also avoid exposure of digitized materials to additional sources of heat and light.



During digitization

An important aspect to be considered is **light control**. During the scanning process, the materials are exposed to heat and light, for a rather long period of time. You should minimize the heat exposure in this case. This is possible by...



Placing special **infrared protection foil** between the lights and exposed materials. The foil will absorb a considerable part of the generated heat.



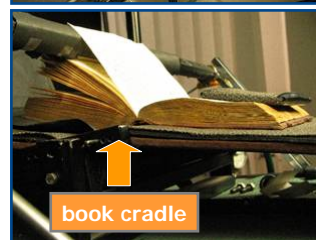
Placing **small ventilators** behind the lights. The air will take the heat out of this space.

During digitization

You should be especially careful when handling the **bookbinding** during mechanical browsing and exposure of individual pages or folios during scanning.

It is well-known that a loosened bookbinding is a source of considerable damage in old manuscripts. The loosened **spine of the book** enables the pages or folios to move and thus to rub each other during handling. This may also happen **during storage if the storage conditions change** and cause an alteration in the volume of the books' materials. In this situation precious colour illuminations may blur or fade.

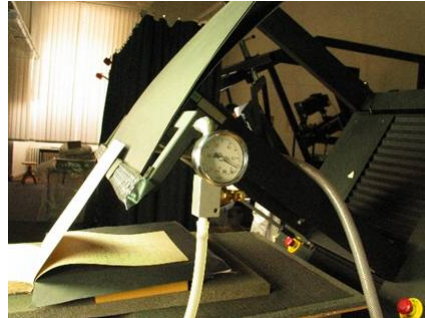
A good solution is to use a **book cradle** to provide support for the book spine.



During digitization

The book cradle can be combined with devices that contribute to better quality of scanning.

The problem usually is the creation of smooth surfaces of scanned folios or sheets. This can be achieved by the application of **vacuum-based bars for holding individual folios**; the air pump can be placed in a neighbouring room.



Remember that the **human factor** is very important during the digitization process. Therefore, you should educate the scanner operators and increase their awareness that they are working with very rare and often irreplaceable cultural heritage documents.

After digitization

For **transportation back to remote repositories** take the same security and climate control measures as you did during transportation for digitization.

Use the digitization-related care period for the introduction of **additional preservation methods**; try to improve the storage of originals, for example, by the use of protective boxes made with acid-free millboard paper or use protective permanent paper envelopes.



Acid-free mill board boxes protect delicate books against further damage: try to apply them after digitization if it was not done before.

Special equipment and resources

To summarize: can you associate the targeted action listed on the right side with the relevant objects?

A

book cradle
vacuum based fixation bars
infrared protective foil
acid-free mill board paper box

1 careful digitization of individual folios

post-digitization care

protection of the book

fixation of the book spine

Click each option, drag it and drop it in the corresponding box.
When you have finished, click on the confirm button.

Image quality

Please remember that, as delicate and cultural heritage documents should not be digitized repeatedly, you should first establish the image quality requirements for your project.

You can call the produced image **the archival quality reference image**, as this will become the source for any kind of user (access) images.

This should be stored in a widely used ISO format such as TIFF, and have a resolution and colour depth which would guarantee that there will be no need to digitize the originals again for quality reasons.



The archival quality digital reference does not replace the original entirely, as the original is irreplaceable and it should be preserved as long as possible;

The archival quality digital reference image will also act as a digital archive of the original.

Summary

Digitization of delicate cultural heritage documents is a specialized area of work that requires the use of **specialized devices and techniques** and the employment of **trained staff**.

It is more expensive than normal scanning, but use of the **recommended technologies** is important in order to avoid future problems in sharing our digital production with others, not to mention accelerated damage to originals.

It should be done with maximum care and at the highest quality to ensure the best possible preservation of rare heritage documents.



Exercises

The following three exercises will help you test your understanding of the concepts covered in the lesson and will provide you with feedback.

Good luck!



Exercise 1

Why is digitization a good solution for preserving delicate and heritage documents?

- Because it helps avoid deterioration risks by replacing original documents with digital copies.
- Because it allows us to reduce the deterioration of the original documents by excluding them from physical use.

Please click on the answer of your choice

Exercise 2

When should you use infrared protection foil or small ventilators to preserve materials?

- During their transportation to the digitization centre.
- During the scanning process.
- After the digitization process.

Please click on the answer of your choice

Exercise 3

Can you identify features of the following kind of images?

A

Archival images
Access images

1

High resolution and color quality
Stored in formats based on user requirements
Enable fast Internet transfer
Stored in TIFF or JPEG format

Click each option, drag it and drop it in the corresponding box.
When you have finished, click on the confirm button.

If you want to know more...

Online Resources:

Safeguarding the Documentary Heritage. A Guide to Standards, Recommended Practices and Reference Literature Related to the Preservation of Documents of All Kinds. George BOSTON. Paris, UNESCO, 1998. 57 pp.
(<http://unesdoc.unesco.org/images/0011/001126/112676eo.pdf>)

ICC Specifications. International Color Consortium (http://www.color.org/icc_specs2.html)

Data Dictionary - Technical Metadata for Still Images - NISO Z39.87-2002
(http://www.niso.org/standards/resources/Z39_87_trial_use.pdf)

EAD DTD Version 2002 (<http://www.loc.gov/ead/ead2002a.html>)

DTD for Digitized Periodicals, Version 1.0 (http://digit.nkp.cz/DigitizedPeriodicals/index_web.htm)

Links to working access systems to delicate manuscripts:

Memoria programme (http://www.memoria.cz/site_en/index.asp)

St. Laurentius Digital Manuscript Library (<http://laurentius.lub.lu.se/>)

Manuscripta Mediaevalia (<http://www.manuscripta-mediaevalia.de/>)

Digital Scriptorium (<http://sunsite.berkeley.edu/Scriptorium/>)

European Manuscript Server Initiative (<http://gandalf.hit.uib.no/vol/emsi/emsi.html>)

Codices Electronici Ecclesiae Coloniensis (CEEC) (<http://www.ceec.uni-koeln.de/>)

