



Canadian Council of Archives
Conseil canadien des archives

Digitization

and Archives

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Preservation Committee
October 2002

Declaration of Principles Concerning the Relationship of Digitization to Preservation of Archival Records¹

Digitization is the transformation of analog information (from whatever form and from whatever support) to digital code.

The Preservation Committee of the Canadian Council of Archives supports the following principles as a guide to the development of digitization programs in archives.

1. Digitization encourages preservation by limiting the handling of original records.
2. Digitization is, above all, part of an access strategy.
3. The process of digitization must not place original records at risk of damage from handling or use.
4. The establishment of a digitization service must not violate the physical or intellectual rights (property rights, copyright or privacy) of persons.
5. Digitization must strive to preserve to the greatest extent possible the authenticity and integrity of the original information. Digital enhancements may be performed on copies to improve access, but an “authentic” unaltered version (the original analog document or a digital version) must always be kept.
6. The institution must define clear objectives (access, or a combination of access and preservation) before implementing a digitization program.
7. Records should be chosen for digitization only after a careful selection process. They must meet project objectives, not present legal constraints, be capable of being digitized and match available resources.
8. The technological approach to digitization must satisfy project objectives and must accommodate the characteristics of the records.
9. Search tools are an essential part of a digitization project and must meet the needs of users.
10. Since digital information is at risk of loss due to technological obsolescence (physical supports, logical formats, as well as software for searching and displaying the information), institutions embarking on a program for the long-term preservation of digital records must be aware of these dangers, the complexity of such a program, and the costs that are implied².
11. Institutions must not neglect other activities when allocating resources for the establishment and maintenance of a digitization service.

¹ Among the interesting examinations of the relationship between preservation and digitization in archives, see Conway in Sitts (2000), Dorr and Hartmut (1997), Gertz (1999), Kenney and Rieger (2000), Menne-Haritz and Brübach (1999), Smith (1999) and SAA (1997).

² It is essential to evaluate the recurring costs of a digitization program (the cost of converting digital formats every three to five years).

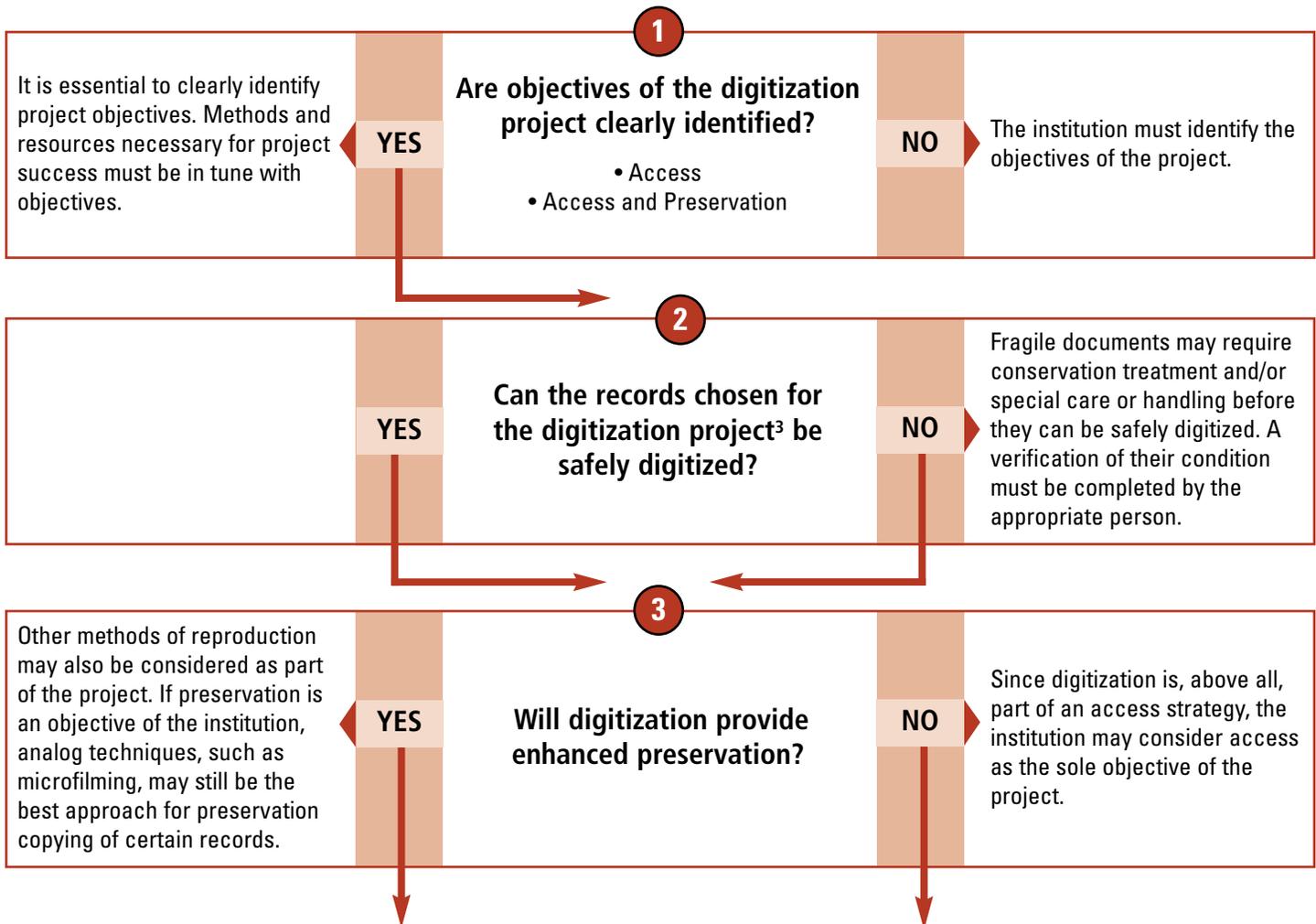
12. The impact of a digitization program on the institution's other public service activities (research room use, orders for copies, etc.) must be considered as a factor of informed decision-making.
13. Realizing the costs and complexities inherent in the development of a digitization program, institutions should try to share resources (financial, material, human) and collaborate with others, where possible.

Decision Tree for Digitization Projects

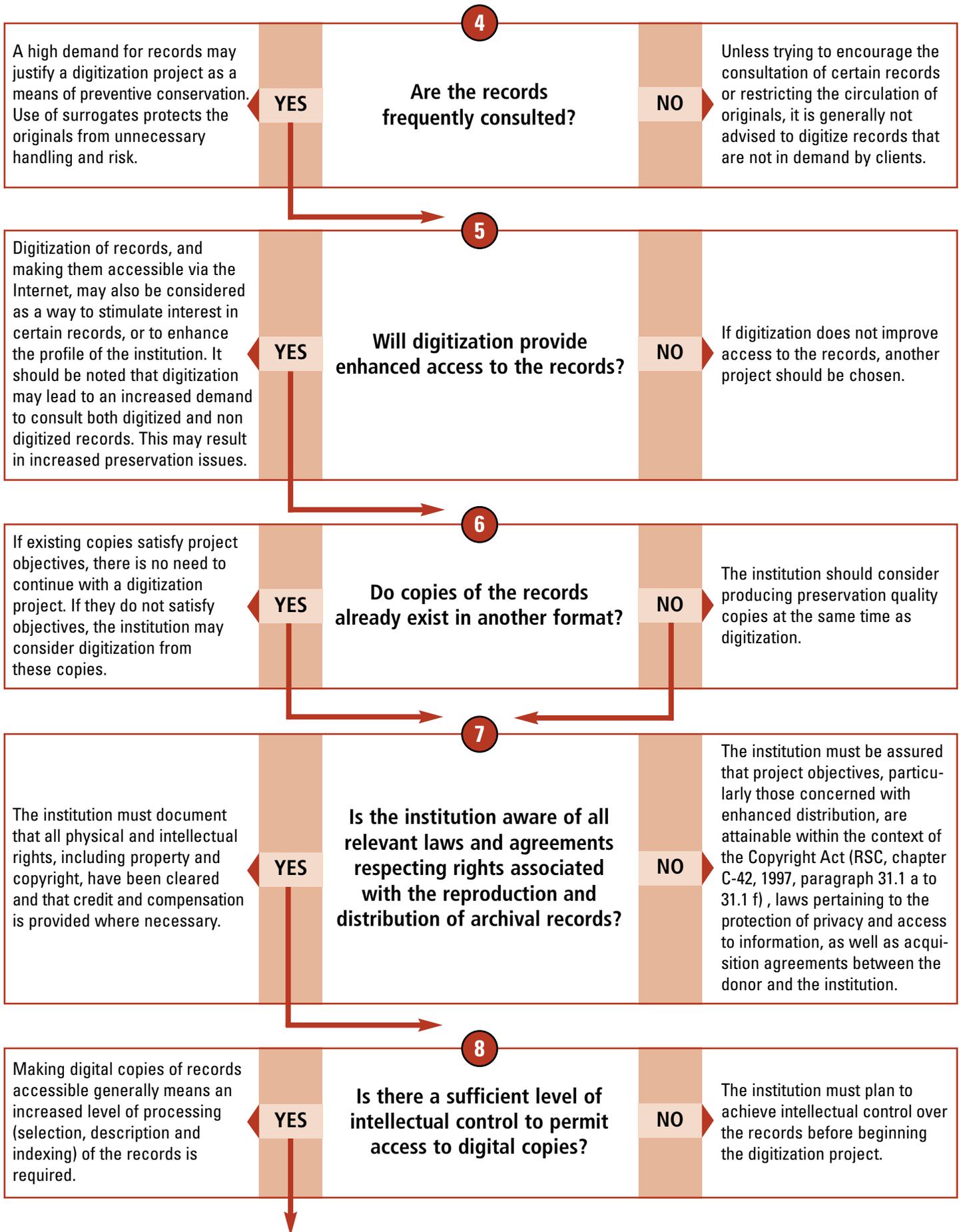
This decision tree is meant to assist archivists in identifying records for digitization projects by reviewing fundamental issues:

- first, that project objectives are clear and lead to identifying and obtaining the technology and resources necessary to achieve project goals;
- secondly, that the long-term costs of a digitization capacity must be maintained and supported by the institution and its parent organization.

This document addresses the steps in a digitization project at a macro level. To resolve technical issues at a higher level of detail, the reader is provided with a list of references for further reading. The reader will note that this document describes the management of digitization by “project”. The characteristics of records, the objectives possible and the means to reach them are so diverse that specific solutions are difficult to predict.



³ Several publications present criteria aimed at helping archivists select records for digitization projects. Notable among these are Ayris (1998), Colombia University (1998), De Stefano in Kenney and Rieger (2000), Gertz (1999), Menne-Haritz and Brübach (1999) as well as Vogt-O'Connor in Sitts (2000).



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<p>Has the institution attempted to find partners for the project?</p> <ul style="list-style-type: none"> • Digitization in the private sector • Sharing of resources between similar institutions 	<p>YES</p>	<p>Is the institution and its parent organization prepared to dedicate the resources necessary (human, financial, material, technological) to reach the objective(s) of the digitization project and to maintain it in the long term?</p> <ul style="list-style-type: none"> • Intellectual control • Preparation of records⁴ <ul style="list-style-type: none"> • Digitization • Quality control⁵ <ul style="list-style-type: none"> • File Storage • Search and Retrieval <ul style="list-style-type: none"> • Distribution • Migration and Conversion 	<p>NO</p>	<p>An inadequate level of human, financial, material, and technological resources available may lead to a change in the scope of the project or the selection of other records for digitization.</p>
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<p>The technical specifications selected have a considerable impact on the project's budget, on the management of the project, on the current and future use of digital copies, as well as the long-term preservation of the digital information.</p>	<p>YES</p>	<p>Have the technical specifications⁶ for meeting the objective(s) of the digitization project been identified?</p> <ul style="list-style-type: none"> • Image type (B&W or colour; bit-depth) <ul style="list-style-type: none"> • File format (tiff, jpeg, mpeg, mp3, Thumbnails, etc.) • Density⁷ (in dpi) and size (in pixels) of image • File storage (hard disk, CD-ROM, etc.) <ul style="list-style-type: none"> • Search (database) • Distribution (Internet, CD-ROM, etc.) 	<p>NO</p>	<p>Research the available options and chose those which best satisfy the project objectives.</p>
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⁴ Including the application of preventive conservation measures and, if necessary, the conservation treatment of records.
⁵ The institution must develop a rigorous quality control process for three stages of the project: first, during the preparation of a specifications document, irregardless whether the work is done within the institution or by the private sector; second, during key steps in the project; and third, during the delivery of the final product.
⁶ Concerning technical specifications and their impact on achieving project objectives with relation to available resources, see Chapman in Sitts (2000), Fleischauer (1998), Kenney in Kenney and Rieger (2000), Price-Wilkin in Kenney and Rieger (2000), Puglia and Roginski (1998), Puglia (1999), and Puglia and Sitts (2000). On quality control, the reader should consult Rieger in Kenney and Rieger (2000).
⁷ Institutions who intend to scan textual documents using optical character recognition must use a density which meets project objectives.

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Institutions who commit to preserving information in digital form⁸ must also commit to a substantial investment in keeping up with technology. While international standards address physical formats for digital information, this is not the case for software components (operating systems, databases for search capability, viewing software), or for logical formats where a certain level of risk management⁹ remains. Planning for migration/ conversion is required for long-term preservation of digital formats and information.

YES

Has file migration/conversion been planned?

- Change in physical format
- Change in logical format
- Migration of databases

NO

Evaluate the long-term costs for the preservation of digital formats and obtain the resources necessary. If the resources are not available, modify the objectives of the project.

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If the records chosen respond to the conditions described, if project objectives are in tune with the technological and financial resources of the institution, and if the parent organization supports the institution, the digitization project may begin.

⁸ Problems associated with preserving digital formats are elaborated in many of texts listed in the bibliography with this document. The substitution of analog documents with digital surrogates is not recommended as the current state of technology does not yet offer sufficient guarantees for the long-term survival of digital formats. However, there are exceptions to this rule. The substitution or analog audio-visual documents with digital formats is foreseeable if the equipment necessary to read the analog formats will become obsolete and if the physical supports for analog audio-visual documents will no longer be available in the marketplace. It will be necessary, therefore, that the parent organization of the institution commit to maintaining, over the long-term, the digitization/preservation program that has been established. On that matter, read Besser (2001), Murphy (1997) and Paton (1998).

⁹ Concerning the question of risk management, read Conway in Sitts (2000) and Lawrence (2000).

Selective Bibliography

To update and expand on this selective bibliography, the reader is advised to see the web site of the National Library of Australia and consult the section called *PADI – Preserving Access to Digital Information*, a “subject gateway to digital preservation resources”. Other bibliographies organized by subject, and often with annotations, can be found on this site: National Library of Australia. *Preserving Access to Digital Information (PADI)*. Canberra: National Library of Australia. <http://www.nla.gov.au/padi>

References to Internet resources were verified as of 30 January 2002.

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Case Studies

The following references provide, or direct the reader to, case studies and examples of digitization projects:

References to Internet resources were verified as of 30 January 2002.

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