INTRODUCTION

Within the past few years, hundreds of libraries and archives have begun to capture images of books, pamphlets, journal articles, manuscripts, photographs, slides, and other materials in digital form and have been storing them for retrieval from within and without their facilities. For some, especially libraries and archives with aging collections of irreplaceable materials, the motivation has been a desire to preserve the material, but for most the motivation has been to improve access.

Preservation

Many libraries, especially research libraries, and archives are threatened by a massive problem of deterioration and loss of the collections they contain because the papers are becoming increasingly fragile as the result of age, chemical instability, environmental conditions, handling, natural disasters, and theft. Preservation consists of the activities associated with maintaining library or archival materials for use by conservation techniques that stabilize them physically or reproduce them in another format without altering their appearance. The reproduction cannot only protect the original by limiting access to it but can represent the original in such detail that most, if not all, of the users' requirements can be met even if the original is lost.

If preservation is a library's or archive's primary motivation for capturing images of materials, microfilming is more cost-effective than digital imaging—and more permanent. Although microfilming a single sheet with clean, printed type costs as little as $0.15, digital imaging costs at least $0.31 to $0.34. The cost increases substantially in the case of books and pamphlets: up to $2 per page for microfilming and up to $4.30 per page for digital imaging. Photographs add another 65% or more to the costs.

Archival quality microfilm lasts 100 years, but digital images have to be refreshed or recopied every 10 years or so, in part because storage technology is constantly changing.

Access

The extra cost of digital imaging can be justified when the potential level of use of the material is high, regardless of the condition of the original. The retrieval of a digital image is not limited to a user who is at the same location as the image, nor is it limited to a single user at a time. Overcoming the geographic constraints is often described as image distribution, but in this report the term used is access because the emphasis is on the user.

Preservation and access are not mutually exclusive. The Northeast Document Conservation Center, although established to provide preservation microfilming services to libraries and archives, reports that many of the documents it microfilms are subsequently captured in digital image form at additional cost. The microfilm is then stored for preservation, and the digital image form is used to enhance access.

The emphasis in this report is on access, but much of the information is useful to those whose motivation is preservation.

The components of an imaging project—image capture, image storage, image organization (cataloging or indexing), image transmission, and image access—constitute a system. The system can be assembled by a vendor for sale as a turnkey or bundled product that includes all the components needed, or it can be assembled by a library or archive from many sources. Compatibility among components is achieved by adherence to standards.

Chapter 1 provides an overview of imaging systems for those who wish to stay abreast of developments in the technology. Chapter 2 discusses some technology basics. Chapters 3 through 8 discuss the technology in detail for those who are actively considering an imaging project and wish to purchase an imaging system.

Chapter 3 is devoted to image capture; Chapter 4 to image editing; Chapter 5 to image storage; Chapter 6 to organizing images (cataloging and indexing); Chapter 7 to image transmission; and Chapter 8 to image access.

Chapter 9 identifies vendors and their products, with the emphasis on vendors that offer complete systems for libraries and archives, and service bureaus that provide undertake image capture. Chapter 10 briefly describes several imaging programs in libraries and archives. Chapter 11 discusses costs.

The Appendixes include a glossary, bibliography, and vendor addresses.