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Bit By Bit: Digitizing Information

By Ron Weinz and **Joyce Ogburn**

No Abstract

Ogburn, J.L. (1992) Bit By Bit: Digitizing Information. *Against The Grain*, 4(2), 41.
Version of Record Available from <http://content.lib.utah.edu>.

Bit by Bit

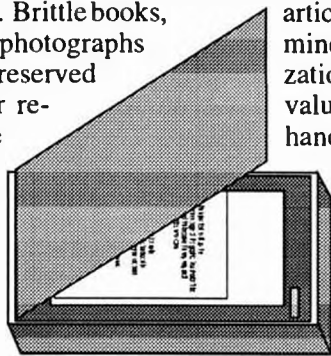
Digitizing Information

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Librarians began to explore the technologies that allow printed materials to be converted to a digitized form in the 1980s. This technology essentially turns a printed original work into a computerized image. Although the technology is not new, it is only recently that it has become feasible to put the technology into test production in libraries.

Digitizing is accomplished through the use of a scanner, which employs optical character recognition technology. This technology is available today and can even be used with your personal computer if you wish to scan a document and convert it and its artwork to a digitized form. The result is an ASCII text file, created from a bit-mapped image. A digitized image can be retrieved through a computer to be viewed, printed, or transferred over a network. Digital imaging technology has several potential applications in libraries, including preservation. Brittle books, journals, art prints, or photographs may be scanned and preserved in a digitized form or reprinted on acid free paper to replicate the original work. The library may even scan facsimiles of printed works, such as microfilm, to convert them to a digitized form.



In addition to preservation applications, the library may be able to use the digital technology to provide improved access to collections and to complement other library electronic services. Many electronic services can handle text but not illustrations. A digital image can capture both text and picture, thus preserving the original appearance of the work. Like microfilm, utilization of digital tech-

nology requires specialized equipment, but the computers required by digital technology are more widely available than microfilm readers and printers.

Access also may be improved by indexing the work in a way that is familiar to readers: indexing by page, chapter, or other familiar book parts. The lack of this level of access has always been a drawback of using microforms. Libraries may be able to provide access to the digitized image through the OPAC, through on demand printing services, or through remote access by their local users and by other institutions and networks.

This technology seems ideally suited to presenting works which rely on text and pictures to relay their information. Digital images can show color and subtle shading. Encyclopedias, newspapers, scientific articles, immediately come to mind as candidates for digitization. Also, consider the value of preserving and enhancing the images of the Dead Sea Scrolls or Egyptian hieroglyphics.

Several libraries are pioneering the application of digital technology to preservation efforts. For now, there are still many questions regarding the resolution of the digitized image, access mechanisms, and the longevity of the storage media which the pilot projects are designed to answer.

Since the application of the technology in libraries is still fairly new, it is uncertain whether this form of access is affordable or really desirable. The advantages of using this

technology must prove to be great enough to overcome the problems of putting it into production.

When the major problems are solved, what impact might this new technology have on collection development and acquisitions?

Collection managers may have more options in preserving and providing access to the intellectual content of their collections. The selection process will involve more choices in the medium of material to collect, and whether to provide access directly through the collection or over networks. Collection managers will be able to decide whether to digitize their own collections or whether to borrow, purchase, lease, or access the material from another source.

Acquiring digitally created or enhanced images for the library collections means that the acquisitions department can add another medium to the array of materials it now acquires. Given that acquisitions departments now acquire many nonbook formats, the purchase or lease of digitized products should pose no special challenge to current acquisitions processes.

But in digital technology we have another example of how the lines between ownership and access are becoming more blurred. As the digital image, along with other electronic information becomes more widely available over networks, on disks or tapes, or printed on demand for the patron and acquired through interlibrary loan or other cooperative arrangements, the ultimate outcome may be a rethinking of library functions and a reorganization of services to better deliver electronic information. ☛