Computer assisted retrieval systems

South Carolina Department
of Archives and History
**Archives and Records
Management Division**

Introduction Recently, the field of records management has benefitted from the integration of the computer with micrographics. Now, a technology called Computer Assisted Retrieval (CAR) is rapidly becoming an integral part of many electronic records management programs. A CAR system uses computer hardware and software to index and locate documents or images that are recorded on all mediums. It is gaining widespread recognition for its ability to provide instant and low-cost access to vast amounts of information and to solve information management problems that computers alone cannot. This leaflet will explain the advantages and disadvantages of using a CAR system to manage micrographics.

System components Four elements make up the basic CAR system:
1) the microfilm camera
2) storage/retrieval equipment
3) the computer hardware—either mainframe, mini-computer, or microcomputer
4) the computer software.

Camera A CAR micrographics system can use any rotary or planetary camera that can produce either 16mm or 35 mm film and can blip encode. The system is used most frequently to index and

retrieve images on roll microfilm, but it can be used as well to index and retrieve jackets, aperture cards, and microfiche produced from source documents or the computer.

Storage/retrieval To access quickly documents on roll microfilm for viewing or printing, CAR systems use blip counting readers or reader/printers. Some of the more expensive operations support on-line systems that are automatic—an operator can direct the system to search for microforms and insert them automatically into a reader for viewing simply by keying in indexing information. These more expensive systems can often retrieve related records as well. Less expensive operations are manual—an operator keys in the information, the computer gives microform image numbers, and the operator then physically removes the microforms from the files and loads them onto an off-line reader for viewing.

Hardware Because the various CAR systems vary widely in their capabilities and applications, the hardware each requires will vary. The hardware can range from a small, stand-alone microcomputer to a large mainframe system supporting multiple information systems.

Software Software can be developed in-house or locally or can be purchased from a software vendor. Usually, software purchased from a vendor is less expensive and more user friendly. Whether the software is purchased or developed, however, it must be compatible with the system hardware and the micrographics equipment.

The CAR concept

When related records are received randomly, when it is impossible to film them in a sequence that makes them readily useable or easily retrieved, and when it is impractical to develop manual or semi-automated systems to do so, CAR can solve the problem. No matter what CAR system is chosen, the process used is essentially the same. Records are filmed as they are received, and either before filming or during filming, each document or image is imprinted with a unique number or encoded with a special mark (blip) that will be used to retrieve it. Descriptive information that will form the index is entered either from the record when it is filmed or from the film later. The amount and nature of information

indexed will depend on retrieval requirements. Sometimes it may be enough to index only a name. Often, it may be necessary to provide more search options by indexing a name, a subject, a date, an account number, or any other identifier.

Advantages of CAR

By using CAR you can:

- Save space—by storing microfilm instead of paper you can enjoy a space savings of over ninety-five percent.
- Retrieve records quickly—you can use the computerized index to retrieve information in under thirty seconds.
- Update microfilmed records—you can film information as it is added to a file, then use the index to retrieve current information relating to that file.
- Reduce misfiling—you can lose or misfile information on paper; the information you store on film and index in CAR remains in place.
- Accommodate multiple indices and cross indices—by using the computer to index, you can search for documents in a variety of ways.
- Retrieve related documents—you may be able to use the system to retrieve documents that are not part of the same file but are related—documents received on a certain day for example.
- Cost savings—it costs you less to store information on microfilm than it costs you to store it on magnetic media or paper.
- Generate reports—if you use a more expensive system, you may be able to provide management and statistical reports on image retrieval.

Disadvantages of CAR

Like all systems, CAR has disadvantages that must be taken into consideration. These include:

- Computer downtime—when the computer goes down, you lose access to your records.
- Vulnerability of the information—if your index has errors or is somehow damaged (by a power surge for example), an image can be affected or lost. If the index is lost, your information is lost.
- Staff time required for data entry—this is an important consideration if your volume of records is high.

- Compatibility—a software package may not run on all brands of computers.
- Software updates—updates in the system software may require changes in the application software.

Is CAR in your future?

Whether you are an agency, an educational institution, a state official, or a local official, you must first analyze your records management needs. A CAR system offers many benefits, but it is not cost-efficient for all operations. Here are some factors to consider:

1) The volume of records to be stored, the rate at which they will be retrieved, and the time it will take to retrieve them. Generally speaking, the lower the volume of records, the higher the suitability of traditional filing methods.

2) The number of documents in each file unit (in a single customer account, for example), and the number you will have to reference at a time—will you have to view the complete file or just one specific document? If you have to pull a number of documents each time you reference the records, it may be quicker to use a traditional filing system.

3) The length of time the records must be kept. What will it cost to store the index magnetically?

4) The state or local regulations that may apply. Check with your procurement officer and the S.C. Department of Archives and History.

Which system is best?

If you decide your operation would benefit from a CAR system, find one to meet your long-term needs. Visit other government professionals who use CAR systems for records like yours. Ask questions about software, system flexibility, compatability, reliability, and support services. Before you make your final selection, please contact the Archives and Records Management Division of the South Carolina Depart-

For more information

This leaflet is one of a series of leaflets issued by the Archives and Records Management Division of the South Carolina Department of Archives and History.

The Archives and Records Management Division has statutory responsibility for advising government offices on micrographics. The Archives and Records Management Division also issues publications and gives advice and help on records management and archival administration.

For more information, please contact the South Carolina Department of Archives and History, Archives and Records Management Division, State Record Center, 1919 Blanding Street, Columbia, SC 29201. (803) 734-7914.

Public information leaflets from the Archives

no. 1 *Legal requirements for microfilming public records (1992)*
no. 2 *On choosing records for microfilming (1992)*
no. 3 *Service bureau or in-house microfilming (1992)*
no. 4 *Targeting and certification of microfilm (1996 revised)*
no. 5 *Choosing a microfilm camera (1992)*
no. 6 *Quality testing of microfilm (1992)*
no. 7 *Microfilm and microforms (1992)*
no. 8 *Choosing a micrographics service bureau (1992)*
no. 9 *Choosing microfilm readers and reader/printers (1992)*
no. 10 *Computer assisted retrieval systems (1992)*
no. 11 *Microfilm storage (1992)*
no. 12 *Preservation microfilming (1992)*
no. 13 *Optical Disk: policy statement and recommended practices (1996 revised)*
no. 14 *Storing records in the State Records Center (1993)*
no. 15 *The deposit of security microfilm (1993)*
no. 16 *Disaster preparedness and recovery in state and local government records offices (1993)*
no. 17 *How to conduct a records inventory (1993)*
no. 18 *How to establish records retention schedules (1993)*
no. 19 *Photographic media (to be announced)*
no. 20 *Editing and splicing roll microfilm of long-term or archival value (1994)*
no. 21 *Managing E-Mail (to be announced)*
no. 22 *Standards for microfilm service bureau certification (1996)*