

flow of a record means knowing why a record came into existence, who created it, when it was created, as well as how it is used in a particular office. Furthermore, it means knowing what records or sources of information are used to create this record and also the information provided or records created from this record. Every records series serves a particular function in an organization, and if that function happens to be vital, the supporting records may also be vital. If so, imaging should be considered as a method of vital records protection.

**Procedural Considerations.** First of all, it is very important to determine the *point of stability* in the flow of the document. Stability is the point at which no more annotations or additions are made to the document or file. This is important because conventional microfilm cannot be annotated and WORM optical disk imaging systems can only be annotated by making a copy, annotating the copy, and re-scanning the new document into the system. If the point of stability is established early, microfilming can simply be postponed until the file is closed. A flowchart may be helpful in this analysis, such as is provided in Section XIII of the form in Figure 12.1b.

In microfilm systems, *additions* to the file may require splicing or using jackets or other insertable or updatable microforms. However, in electronic imaging there is the advantage of adding documents easily at any time and bringing them together into a file for display without splicing or special microforms.

If the document or file is subject to annotation *throughout its normal life*, such as is the case with some engineering drawings and other types of records, the analyst must consider alternate methods of annotation, perhaps using a microform that has a paper area for annotating, such as an aperture card, or by reimaging. When this type of problem is discovered in the study, it should prompt the analyst to investigate the technical possibilities of the potential systems or microforms before proceeding further.

**User Considerations.** In studying the flow of the document, user considerations are also important to a successful system. For example, if the record is an architectural plan, viewed at the construction site as well as at the office, paper prints will be required, and equipment will be required to make the print. At the construction site, the lack of electrical power, the weather, the bright sun, and normal convenience would probably make a portable viewer and screen image impractical for the engineer. On the other hand, the construction site office might be equipped to use aperture cards and perhaps produce prints on site if needed.

In some operations, telephone inquiries are answered using microfilm or optical disk as the information source. In this type of use, speed is normally an important factor. A few moments waiting on the telephone can seem interminable to a caller, so even a slight delay can have an adverse effect on customer relations. In such a situation it is important not only to know how fast the current system is, but more importantly, to provide adequate service if the speed is satisfactory. It should be noted that the "satisfactory levels of efficiency" discussed earlier in this chapter may require a much higher level of technology and thus may have a cost that far exceeds the present cost. When this occurs, the required level of efficiency should be closely examined to determine if it is really necessary. Usually, the retrieval speed requirement is established by the person responsible for providing the service, usually the manager or the manager's manager. Ultimately, it is a matter of managerial judgment tempered by costs.

User considerations also include ergonomics, that is, those aspects that deal with the physical problems people experience with the machine. At the simplest level, the analyst needs to be concerned with employee comfort and physical welfare. An uncomfortable position, eye strain, long reaches, and insufficient work surface can all impede efficiency.

The number of people who use these records and where they are located is very important. We need to know, for example, if ten employees each

INVENTORY AND RECORD SERIES SUMMARY									
1. INVENTORIED BY AND DATE DLD 4-30-79		8. SCHEDULE NO. 10-101				7. RETENTION PERIOD 6 Years			
2. RECORD TITLE Drafts Issued, Voucher Copies		9. STORAGE CODE A				10. CONTACT C-4b			
3. RECORD ALSO KNOWN AS Computer Drafts		11. APPROVED BY W. A. Proov				12. SIGNATURE <i>W. A. Proov</i>			
4. DEPARTMENT Disbursements Accounting		5. SECTION Payables							
GENERAL DESCRIPTION, PURPOSE AND USE OF RECORD SERIES									
Copy of voucher portion of draft issued for payment of bill or invoice for equipment, supplies or services. File is maintained for reference, proof of payment, audits and as a supporting record for journal entries.									
RETENTION REQUIREMENTS									
COMPANY		REGULATORY		OFFICE		STORAGE			
1 year		6 years		4500 11n inch		2400 pages		2700	
5 years				3/77 - 3/78		per day		1/74 - 12/78	
6 years								per year	
REFERENCES									
QUANTITY	TIME SPAN	INCL. TIME	SEARCH TIME	REFER. TIME					
30	day	.5 min	1 min	5 min					
STORAGE									
5	day	.5 min	6 min	5 min					
EQUIPMENT IN OFFICE									
DESCRIPTION		QUANTITY	FLOOR SPACE	INVENTORY NUMBER					
7 Shelf TSF		8	50 sq ft	1-8					
5 dr ltr File Cabinet		5	35 sq ft	9-13					
FILE SUPPLIES UTILIZED									
DESCRIPTION		QUANTITY							
File folders, end tab ltr size		30,000							
File folders, 5th cut ltr size		1,500							
INPUT/OUTPUT RECORDS									
RECORDS USED TO CREATE THIS RECORD (Show R/E Any)					RECORDS CREATED FROM THIS RECORD (Show R/E Any)				
Contracts					Journal Entry				
Leases					Budget Recaps				
Purchase Orders					Tax Returns				
DUPLICATE AND ALTERNATE SOURCES									
DUPLICATE SERIES (10-010) Microfilm copy					ALTERNATE SERIES Canc & Pd Drafts Purchase Orders				
FILE CONTENT AND DISTRIBUTION									
DOCUMENT #1		DOCUMENT #2		DOCUMENT #3		DOCUMENT #4			
Original Receipt or Invoice		Payment authoriza.		Request For Payment		Voucher Copy of Draft			
MEDIA CODE F/MS		C/MS		F2-4/MS		PO-3/MS			
FORM NUMBER External		N/A		23000		35010			
JOB NUMBER N/A		N/A		N/A		AT022			
SIZE Various		Various		8 1/2 x 11		8 1/2 x 8			
COLOR Various		White		White		Green			
% OF VOLUME 25%		25%		25%		25%			
LOCATION OF DUPLICATE COMPONENT DOCUMENTS (Show Office)		Payables (2) Purchasing Vendor		Payables (2) Auth Dept (1)		Payables (2) Vendor			

\* MEDIA CODE: C - Carbon; F - Form; FM - Printed Material; PD - Printout; MC - Microfilm-COM; MS - Microfilm-Sid  
1 - Typed; 2 - Handwritten; 3 - Horizontal; 4 - Vertical; 5 - Both Sides; 6 - Loose; 7 - Fastened

FIGURE 12.1 (a) Inventory and Record Series Summary—Page 1; (b) Inventory and Record Series Summary—Page 2

FUNCTIONAL INFORMATION

PAGE 2 OF 2

Drafts Issued, Voucher Copies

10-101

ORIGINATION AND PURPOSE OF COMPONENT DOCUMENTS

DOCUMENT # 1		DOCUMENT # 2	
A. DOCUMENT NAME Original Bill or Invoice	B. ORIGINATED BY Vendor	A. DOCUMENT NAME Payment Authorization	B. ORIGINATED BY Dept Authorizing Purchase
C. NO PARTS 3	D. ORIGINAL PURPOSE OF DOCUMENT To present charges for materials, equipment or services purchased.	C. NO PARTS 2	D. ORIGINAL PURPOSE OF DOCUMENT Shows departmental authority to pay bill or invoice.
E. HOW USED IN THIS OFFICE Proof of payment, audit support for Gen Ledger Entry		E. HOW USED IN THIS OFFICE Initiate payment of bill or invoice and provide proof of authority.	
DOCUMENT # 3		DOCUMENT # 4	
A. DOCUMENT NAME Request for Payment	B. ORIGINATED BY Payables Section	A. DOCUMENT NAME Voucher Copy, Draft Issued	B. ORIGINATED BY Data Processing
C. NO PARTS 1	D. ORIGINAL PURPOSE OF DOCUMENT Provides authority and information necessary for Data Processing to generate draft and voucher.	C. NO PARTS 2	D. ORIGINAL PURPOSE OF DOCUMENT Shows purpose of draft and provides accounting information necessary to close and adjust payables.
E. HOW USED IN THIS OFFICE Provides proof of authority granted DP		E. HOW USED IN THIS OFFICE Proof of payment, audit purposes and support for Gen Ledger Entry.	

PROCESSING AND TRANSMITTING OF COMPONENT DOCUMENTS

INTERVIEW QUESTIONS	DOCUMENT # 1	DOCUMENT # 2	DOCUMENT # 3	DOCUMENT # 4
1. Triggered By	PO or Del Receipt	Receipt of Service or Material	Receipt of Payment Auth	Request for Payment
2. Received From (Office)	Vendor	Using Dept	Using Dept	Data Processing
3. Parts Received (Quantity)	2	1	1	2
4. Process Begins (When)	within 24 hours	within 24 hours	within 24 hours	within 24 hours
5. Records Referenced in Processing	PO & Agreements	PO & Del Ticket	Original Bill Payment Auth	Request for Payment
6. Additions & Deletions Made (Period of Time)	30 days	None	None	6 months
7. Additions/Deletions Consult U?	Adj for O/C	---	None	Adj for O/C
8. Sent From This Office To	Purchasing		Data Processing	Draft and voucher to vendor
9. Returned To This Office	After verification		After Draft Issued	
10. Copy/Original Retained in Office	Original	Original	Original	Copy & Film
11. Processing Period This Office	10 days	10 days	10 days	2 days
12. Reference Period This Office	1 year	1 year	1 year	3 years

REMARKS

Note - Component 4 Process - Comp 1-2-3 are sent to DP and are returned from DP with voucher as complete file.

make three searches per day or if one employee makes thirty searches per day. So the narrative should tell us how the work is distributed. Distribution of work will be discussed further in Section V.

### Section III: Retention and Legality

Managers sometimes expect imaging systems to solve paper-volume problems when they should first take a close look at retention schedules. If, for example, records are being retained five years when one year would suffice, paper volume will be five times greater than it should be; the documents should be destroyed rather than imaged. In analyzing costs of paper systems and imaging systems, always keep in mind the retention factor because that time frame governs the whole costing procedure. If records are retained for five years, the cost attributed to their maintenance covers a five-year period also. Retention periods have a direct bearing on feasibility. Very short retention periods (days, weeks, or months) seldom warrant imaging. Long retention periods, such as those for archival records, often justify micrographic imaging. And high labor costs for imaging can be more easily justified for long-term records than for short-lived ones.

In a study of the legal aspects of retention, the possible legal restrictions on microfilm imaging and electronic imaging should also be considered. Today most, if not all, courts will admit microfilm as evidence, and common opinion today is that optical disk-based document images will be accepted on the same basis as microfilm. Most, if not all, states have a Uniform Photographic Copies of Business and Public Records as Evidence act, or rules of evidence, and many have at this time modified some of those acts to specifically allow electronic images. A recent study and report indicated that the specific term *optical disk* or similar terms have appeared in at least 80 statutes of 19 states within the last five years, indicating a trend.<sup>1</sup> An AIIM task force<sup>2</sup> recommended among other things:

*If you change your laws at this time, avoid listing specific technologies. Instead permit the use of any technology that accurately reproduces the original or the equivalent.*

But these legal factors do not in themselves preclude the obligation to retain the original document for a period of time. Some states still require keeping hard copy records, even though they are already imaged on film or other media. Some documents by their very nature require that the original be maintained, such as titles and deeds, negotiable instruments, and anything else that denotes ownership rights that can be transferred. Research will reveal if a dual set of records is required, and if it is, the cost can be anticipated. Nevertheless, even in these cases the original hard copies can be stored, and the document image used to full advantage in the office. The legal discussion here is meant to alert the analyst to investigate these matters and is not in any sense a comprehensive basis for legal or retention analysis.

At this point, we can add the distinction between office retention and records center storage. This is important because the cost for retrieval and refile vary greatly between the two. This will be studied more when *references* are analyzed.

### Section IV: Volume

Accurate estimates of volume are extremely important. By sampling, measuring, and counting we can obtain fairly accurate estimates of the total pages received daily and yearly and the total records on hand both in the office and in storage. A 10 percent underestimate on large volumes can cause serious budget and timetable crises, so it is best to include a reasonable margin for error. In either micrographic applications or in EIM applications, volume relates to imaging and imaging involves a manual operation which translates into time frames and labor costs. Also, if a microimage transmission system is contemplated, or an EIM system is anticipated, volume relates to on-line or

near-line storage capacity requirements. For example, for relatively low volumes and moderate retrieval rates, an off-line storage rack for film cartridges will suffice, as the cartridge can be manually selected and inserted into the reader. In the same manner, an off-line optical disk can be selected and placed into the drive for display in the monitor. Such is the case with many standalone systems.

However, higher volumes and retrieval rates may indicate the need for on-line or near-line retrieval. This requires the use of a jukebox to robotically select a disk or cartridge for scanning and display on a monitor. Furthermore, the volume of records that must be stored near-line will also dictate the size of the jukebox required. All of this adds to cost estimates and server power.

**Backfile.** One of the most important decisions that must be made before the feasibility report can be finalized is what to do with the backfile, if there is one. In many systems, the backfile consists of those records that are retained beyond their peak access period. For example, Section XIII of the data collection form may indicate that the records reach a stability point within 30 days of creation or receipt, and reference activity may decline after about 60 days in the life cycle. Total retention, however, may be six years. If we calculate the total number of records in this series, we realize that we have almost 3,000 cubic feet of records that will not be part of our new system, unless these old records are also imaged. This group of records is called *backlog* or *backfile*. In the instance cited here, the 3000 cubic feet of records would be phased out over a period of perhaps five years, at a rate of about 500 cubic feet per year. It probably would not be cost-justified to image this series. Indeed, their disposal date might arrive before the backlog imaging was completed.

If the backfile records had a long retention period, perhaps 50 or 100 years, we might consider imaging those records, if the reference rate justified it. Here again, it is necessary to base this judgment on costs or other intangible needs. Quite

often, the backfile records are not imaged, but rather are stored in a well-organized records center and retrieved as needed. As a compromise to this, sometimes a *scan-on-demand conversion* or *film-on-demand conversion* is performed. This means that the backfile is not imaged unless the record is retrieved for some reason and it is anticipated that there will be future retrievals. If, however, the records are, for example, real estate records and if one is retrieved from storage because the property is sold, it would appear likely that the record would not be retrieved again. Hence, there would be no need to image it after the life cycle ended, other than for historical purposes.

The backfile on permanent records is usually imaged because the records are archival and hence imaging is economically justified. Film- or scan-on-demand is not ordinarily a viable option in this case, unless current records are more active. Often, in this situation, the records have completely stabilized when they are received in the central file area. Indeed, it is not too unusual to say that the older records are more likely to have reference activity than the new.

## Section V: References

Often the uninformed think of microfilm or optical disk as a dead storage medium, whereas the opposite is true. Imaging systems, although perhaps suitable for archival storage, are most beneficial when used frequently. A well-designed imaging system saves retrieval and filing time. Since the amount of time saved is proportionate to the time spent searching for or filing information, the highly active system offers greater *opportunities* for saving than the infrequently used system. The word *opportunities* is emphasized, because the right system, equipment, and medium must be coordinated and used to realize the inherent potential of the system.

In analyzing reference activity, it is important to distinguish among reference time, retrieval (search) time, and index time. In this study, reference time is the length of time that the document

is in use once it is retrieved. It is important to determine if screen-viewing is sufficient or if paper prints are necessary, in the event of long reference times. Retrieval time is the length of time that is required to move to the file location, withdraw the file, and provide it to the user. Sometimes retrieval is self-service and information is obtained in the file area, thus eliminating the travel time associated with a refile operation. Refiling is essentially the reverse of the filing process. Index time is the time normally spent in locating the name or number under which the document is filed. Filing and interfiling are rather similar and usually require about the same time when done in an office environment, where expansion of the files is not involved. Hence they can be treated as a group. Refiling can be somewhat faster than filing because often the place in the file is marked by a charge-out card, which facilitates the refile.

A stopwatch timing is generally not necessary to determine current file activity time. Ordinarily, a file activity time sample can be made of groups of documents, perhaps numbering 50 each. These can be timed to determine the average time, if this batch size is typical of the batches of the current process. However, if the current method has a travel-to-retrieve time ratio of 5 to 1, or even 1 to 1, travel time to and from the file is probably excessive, and the paper system should be reexamined to improve that ratio by improved batching systems.

The purpose of knowing current retrieval time requirements is to be able to show, in a mathematical cost analysis, potential savings or increased costs comparing a new system to an existing one. This information will also indicate if the present system meets the time norms of the units it serves.

The distribution of the searches among the workers in the office must also be noted and considered. For example, if 30 searches per hour are divided equally among three workers, we may require three workstations, or we may have one centrally located, depending on various demands put upon the system. Perhaps the searches are divided equally among three people, but the

searches are made centrally by one person, again, providing another alternative to consider. Document traffic could have an impact on the speed of the server, the jukebox, and cache. Peak load times should be noted so that proper EIM components are selected and the peaks provided for.

## **Section VI: Sorting and Filing Arrangement**

In the sample, the records are first arranged by the year—that is, all 1994 drafts are filed together—and secondly, within that year, they are filed by draft number. Also, in this case the index from vendor name to draft number is created automatically on the computer as the drafts are generated. Obtaining this information from observation and from the present users is very helpful, as the information will very likely provide the index parameters that will be used on any new system, or it may point out a weakness that could be improved.

In this section also is a place to record the number of personhours spent in pre-file sorting, that is, preliminary sorting to facilitate final filing. In the sample, there is no pre-file sorting. However, sometimes considerable personhours are expended in this type of sort, and if so, this information alerts the analyst to a great potential for labor reduction. This can be accomplished by random filing using a computer-generated index, bar code, or OCR scanning.

## **Section VII: Equipment in Office**

This section lists all the filing equipment used in the office to house the current records which are being proposed and evaluated for imaging. This information is used to determine the value of the equipment if it is released and used elsewhere, sold, or scrapped. It also provides us with the amount of floor space that would be freed if an imaging system were justified and installed.

The value of space is low compared to the value of labor. Although a good imaging system will save more money in labor than in space, space is still a prominent factor. Rental on office space can range from an extremely low \$10 per

square foot per year to \$50 per square foot per year, and even more in specialized circumstances. Records maintained in file cabinets require about one square foot of space for each cubic foot of records. If, for example, an office area rented for \$20 per year per square foot and it cost \$20 per cubic foot to image those records, the cost of imaging would be recovered in one year, if the records have a retention period that long or longer.

There are instances, though, when using the square-foot value is not entirely realistic. If the records must be retained in the office for reference and no space is available, the only alternatives, after proper retention considerations, are to move to larger quarters or to install an imaging system. In such a case, imaging is almost always far less costly, regardless of the current cost of floor space.

In calculating the amount of floor space saved through imaging, in addition to the equipment footprint, all necessary aisle space should also be included, unless it is a general purpose aisle that will be retained in any event. The value of space saved is figured by calculating the square footage and multiplying that by the rental factor established or estimated by the corporate financial officer.

The value of freed file equipment varies greatly and ultimately depends on a figure considered reasonable and real to management. Most often, the cost-avoidance approach is used. This approach assigns a value that represents an expenditure avoided by future purchases of equipment. In other words, it assigns the current used-equipment retail price. It is unrealistic to assign a wholesale used-equipment value, unless the equipment will actually be sold to a dealer. New equipment values can be used, if the equipment takes the place of new equipment purchases.

#### Section VIII: File Supplies Utilized

File folders cost money, and this section will tell us how much is spent annually for file folders. It will also tell us something about the system and will enable us to perhaps determine if the current

system is operating efficiently. File folders are normally not used if all files contain only one document. This system, however, contains at least four documents per folder. When one considers the relatively low search rate, it appears that perhaps file folders, with their attendant annual set-up expense and folder cost, are not warranted. Even so, computer-assisted retrieval (CAR) techniques could provide electronic file folders. If microfilm was being considered as an alternative system, the number of file folders may be an indicator of the number of jackets or aperture cards that might be required.

#### Section IX: Input/Output Records

In this section are listed those records or documents that are used to create this record or the records or documents that emanate from this record. Few records are an island unto themselves, and related records must be considered in designing a new system. These records may indeed become a part of the proposed system and may require a detailed study on each record involved.

#### Section X: Duplicate and Alternate Sources

Duplicate records are "carbon copies," so to speak, of the original. Duplicates that have been made unique by the addition of annotations are not actually duplicates, but often can be considered such since one copy at least provides duplicate information. Alternate sources of information are records that contain duplicate information, but not necessarily in duplicate format. Like those records listed in Section IX, these records are related to the main record studied and must be considered in their entirety in designing any new system.

#### Section XI: File Content and Distribution

This section not only describes the file, but also describes the documents that make up this file. This particular sample in Figure 12.1 shows that the record consists of four single-page documents and describes how those pages are distributed and

their characteristics. If the record consists of only one page each, only one column in Section XI need be completed. These data help us to evaluate the technical feasibility of imaging and allow us to calculate imaging estimates and time frames. Not all of the lines of Section XI are pertinent to imaging, so if a line is not applicable it should be ignored. Size and color of the documents are almost always pertinent to imaging. The percent of volume for a particular column means that the information shown applies to the percent of the total documents in the system. For example, we can estimate that documents No. 3 and 4 combined represent 50 percent of the total documents in the system.

#### **Section XII: Origination and Purpose of Component Documents**

This section allows us to describe in narrative fashion who originates the documents, why they were created, and how they are used now. The document numbers shown in Section XII correspond to those document numbers shown in the previous section. This information permits us first to establish a retention period if that is not already done. Secondly, it helps the analyst to make an intelligent judgment in designing a new system and in communicating with the proprietary office personnel. By understanding the records thoroughly, it is possible to look at all related records and their processing and to design a comprehensive image flow system. For example, one may find that duplicate files that are presently retained could be eliminated by a network imaging system. Other systems improvements may be possible; however, present system elements must be understood first.

#### **Section XIII: Processing and Transmitting of Component Documents**

This section is a type of flowchart describing the life cycle of each of the four documents that make up the file; it is used in conjunction with Section XII. A large or more standard flowchart can also

be used, if preferred. Indeed, an entirely different form can be used for this survey, if it seems more convenient. One important factor that can be ascertained from this flowchart is the point of stability, previously mentioned. Other facts in the chart suggest other questions, such as why does it take up to 24 hours to begin processing? Is this desirable? Would a shorter time be preferable? Would a shorter processing time provide tangible benefit? These questions are pursued because we have the technology to answer them, if it is economically feasible.

In tracing the flow of the record from beginning to end, one needs to take note of facts such as are illustrated in this text. We make notes of potential shortcuts, problems identified, and tentative solutions, all of which must be evaluated or tested before the study is complete. Thus, completion of the data collection gives the analyst a full picture of the present system and permits an imaging design from the bottom up.

#### **PROBLEM DEFINITION AND SYSTEMS DESIGN**

The process of analyzing the data actually begins as the data are collected. The experienced analyst sees problem areas and visualizes potential solutions as the problems are encountered. Problems will generally fall into one or more common areas. These areas are as follows:

- Loss of records
- Slow retrieval
- Excessive volume of records
- Lack of space
- Excessive waiting for access to records
- Excessive personhours spent in filing and retrieval
- Delays in processing
- Loss of records in process

The analyst talks and listens to the user who may not know the solution, but generally has a fair idea of the problem. These suggestions de-

serve first attention, and analysis of the data collected will not only confirm the problem but indicate where it occurs.

If the present system is complex, a flowchart of the activities associated with the records should be made. The flowchart is then studied to see if any actions can be eliminated through an imaging system. For example, a separate stamping action could be combined with an automatic endorsing device on a rotary camera or scanner. Or perhaps a sorting or index reference could be eliminated by using a random imaging and retrieval system of either the microfilm or optical disk variety.

The size and form of the record, the reference data, indexing methods, volume, and turnaround requirements will all give some indication of the type of system needed and will provide the initial direction for the balance of the study.

At this point, a knowledge of micrographic and electronic imaging technology becomes necessary. In reviewing the present system, the analyst calls upon available technology to simplify, increase speed, or otherwise improve operations and to solve problems. Certain situations are key indicators for using a particular type of system. For example, a series of sequentially numbered but independent documents lends itself to roll film applications. Files or groups of related documents indicate the possible need to use a unitized microform, such as a jacket or microfiche, or a standalone imaging system. Maps or plans which are larger than B size are usually well suited to microfilm 35-mm aperture cards, although they could be scanned and digitized and viewed on a display monitor also.

Random input and computer-assisted retrieval can be used to eliminate labor costs in systems that require extensive sorting. CAR may also be indicated for systems that require complex indexing. In summary, after zeroing in on a potential system, the analyst should feel that the proposed system is both technically and economically feasible, that it will solve the problems, and that it will be acceptable to the user. The acceptability factor is dependent on establishing a close relationship with the user in the development phase.

Sometimes a particular indicator may appear to be suitable to more than one type of system, and both will need to be evaluated. Very likely, there are other factors involved that will also contribute to the selection criteria. This is particularly so in situations where electronic imaging systems are being considered or preferred.

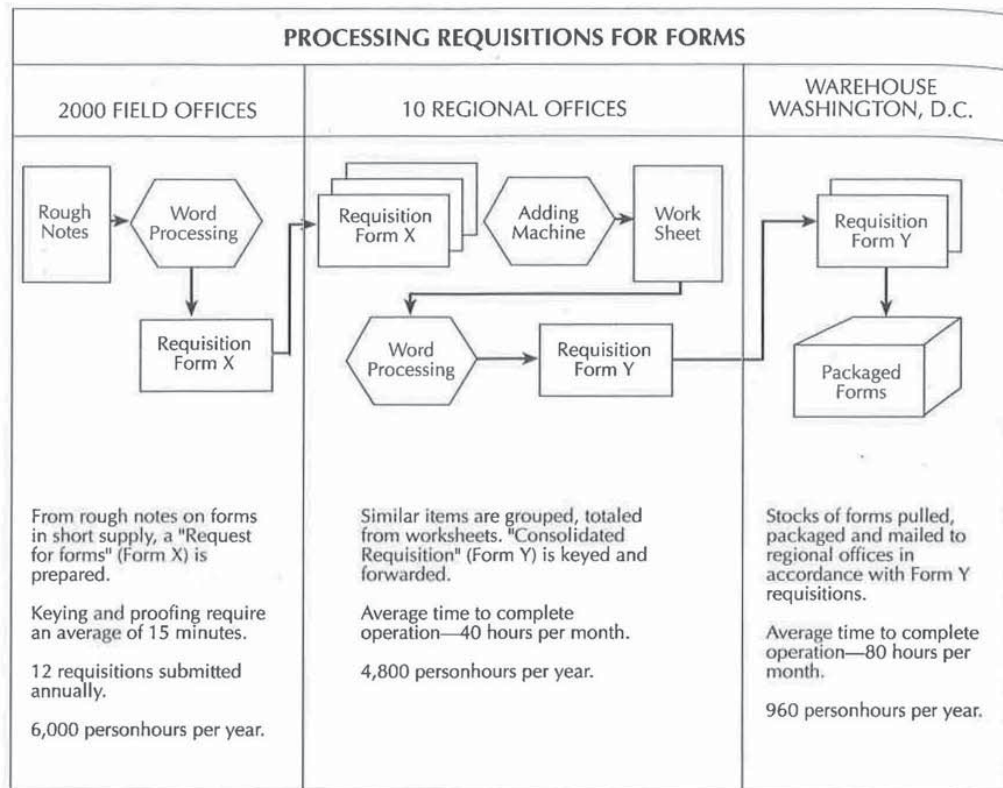
### THE FLOWCHART

Once a tentative system is selected and all the previously mentioned factors in the survey are carefully considered, a flowchart for the *proposed system* should be developed to aid in understanding and to ensure that all facets have been covered. The flowchart can be of any style, and symbols can be adapted to imaging requirements. See Figure 12.2 as a simple example of a flowchart. Usually, there is a master chart in which a number is given to each major function. A chart is then developed for each of the major functions and possible subfunctions. A brief narrative explaining the chart can accompany it.

### TESTING AND EVALUATION

Once a tentative system is decided upon, a sample of the records should be imaged as a test to determine costs and to work out procedures in detail. The first test should include a large enough sample to be representative of all documents that will be encountered in the normal course of work. The main purpose of the preliminary test is to evaluate the system chosen and the image quality and to obtain cost estimates. If the proposed system is a micrographic system, it is important to evaluate the microform chosen. The microform must meet the requirements in every way. For example, a system may be technically suitable, but if the microform chosen bottlenecks the flow, it is most likely not the proper medium to use. If it appears that the system is acceptable, a final test should be performed. If the system requires computer assistance, the program software and the applications program should be put in place.

In those situations where an EIM network



- The flowchart shows what jobs are being performed, where, how, and by whom.
- It identifies all documents, forms, and reports in a procedure.
- It identifies the equipment used and the output of the equipment.
- It records every action required to produce the final product.
- It provides statistical data such as volumes, personhour costs, and numbers of offices involved.

**FIGURE 12.2** Sample Flowchart

(*Simplified Flowcharting*, p. 1, General Services Administration, National Archives and Records Administration, Office of Record Management)

system is proposed and the configuration and software are contracted for through a systems integrator, this phase is performed by those specialists. If the mainframe computer is used as the host server or interfaces with a system server, the in-house

computer and systems personnel will also play a major role in planning and implementation.

The final test should be comprehensive enough to predict the full-scale effect. Actual use of the system chosen in the office under normal

working conditions parallel to the existing system is very helpful before investing in equipment. If that is not possible, visiting off-premise installations similar to the proposed installation would also be suggested. Micrographic equipment is usually available on a trial basis, and standalone electronic imaging systems may also be available on a demonstration basis. The records manager should play a major role in any EIM system development. EIM deals with document-based imaging systems, and document-based information systems are the responsibility of records management.

#### COST JUSTIFICATION AND APPROVAL

Almost every organization has a need to justify capital expenditures, and imaging systems can involve capital costs that are quite significant. All imaging systems have some common costs such as the cost of labor and image capture, the cost of image retrieval and display, and the costs of equipment, maintenance, and space. In any paper-based information system, we also have these comparable costs including space, equipment, supplies, and labor. Assigning costs to these factors is one task, but determining how to justify these costs is another matter.

#### What Is Cost Justification?

*Cost justification*, in its simplest form, consists of comparing the total costs of an existing system to the total costs of a proposed system. If the proposed method costs less than the existing, we could declare that the new system was justified and that there would be a *savings* of  $x$  number of dollars per year. For example, if the existing system is considered satisfactory, there is no reason to change it *unless* there is a monetary savings that would justify the expense and effort. Even if the existing system is not entirely satisfactory, this method of cost justification is still legitimate, as it

can show a savings while solving some problems or at the very least show that it will cost very little to solve these problems.

Sometimes, the problem that an office is experiencing is quite significant, and a major overhaul in the system *appears* to be necessary. Really serious problems must be addressed through either improving a hard copy system or through computerization or through improved imaging systems. In all of these cases it would still be beneficial to perform the imaging fact-finding survey. However, in place of just comparing the costs of one new system against an existing system, it is necessary not only to compare the costs of all potential systems but also to compare the effectiveness of the systems.

Early in this chapter, it was stated that the optimum system should provide information at costs that are equal to or less than any other system that will achieve satisfactory levels of efficiency. A proposed systems remedy might cost millions of dollars, simply because the *satisfactory levels of efficiency* are set very high, and perhaps even too high. Sometimes a high premium is paid to achieve a small percentage of the overall benefit. For example, in at least one instance, 80 percent of the benefits were achieved for only 20 percent of the total cost. To evaluate this, one needs to be able to identify the benefits, the source of the benefits, and the related costs and to decide if the costs are justified. How is this done? The records manager needs to compare the costs and the benefits. Sometimes the benefits, however, are soft or intangible benefits. In this case, we have at least identified the cost, so that a manager can make a decision as to whether the intangible benefit is worth the cost.

Establishing *satisfactory levels of efficiency* should be done with some degree of caution or with a caveat to require that all the system features be necessary or justified if costs are a concern. Occasionally, a system is a part of a larger corporate strategy, and the cost is de-emphasized in favor of appearance, speed, image, and timeliness, which are some of the intangibles discussed previously.

### Developing Cost Estimates

Developing cost estimates involves careful attention to small details as well as to large ones. A fraction of a cent may seem immaterial, but if multiplied by thousands or millions of times for each action, the total amount can become significant.

**Labor.** To accurately assess labor costs to record the images on either microfilm or optical disk, one must know actual production speed capabilities. For most accurate results there should be an on-site test under actual or simulated conditions.

Moreover, normal lost production time should not be ignored. If the test indicates an imaging rate of 3,000 documents per hour, the analyst would be wrong to assume that the operator will perform at this rate every minute of every hour of the workday. More than likely, a conscientious operator will perform work functions no more than 75 percent of the workday. The other 25 percent will be valid work time such as answering the phone, placing imaged paper documents on the shelf, attending meetings, fixing paper jams, dealing with machine failures, and so forth. Although work-measurement techniques can be used to improve the efficiency of the productive time, it is best to base the study costs upon factors that can normally be expected. If an organization has had experience with imaging productivity and has historical production statistics which include "non-productive time," these statistics may be used in lieu of a test.

One important facet of any imaging operation, microfilm or optical disk, is document preparation. The documents may be in folders, and the folder may or may not be properly indexed and indexing time as a result may go way over the budget. Pages may be fastened with staples, and staple removal alone may take as much time as the filming or scanning. Pages that are ragged, crumpled, or folded will have to be straightened. All of this contributes to increased labor costs and longer completion times. If *day-forward conversion* or *scan-on-demand conversion* can be used,

these problems can be eliminated by procedural changes.

**Material.** The cost of material is easier to estimate but should still be calculated cautiously. In microfilming, the most frequent factor overlooked is film waste. Film lead and trailer can account for 10 percent of a full reel of film. When less than full reels are used at one time, the percentage of waste could be much higher. Next, the amount of film needed should be estimated according to reduction ratios, document volume and size, and camera type. For example, 2,400 feet of paper documents carefully aligned in a long row and adjacent to one another would require 100 feet of microfilm if filmed at  $24\times$  reduction. This is so since a  $24\times$  reduction means that the film would be  $1/24$  the length of the documents being filmed. Of course, we need not lay out a hundred feet of documents to estimate film requirements. It can be done mathematically and easily. A simple nonmathematical method is to film a batch of documents and count the number of document images contained on a foot of film. This method includes the spacing between images and is very reliable for estimating total film footage required, based on page volume. Of course, camera spacings vary and can be adjusted. Tables and charts are available for general estimates. As a rule of thumb, a 100-foot roll of 16-mm film will contain about 2,800 images of letter-size documents filmed at  $24\times$  in comic mode. A 100-foot roll of 35-mm film will contain approximately 500 fixed-size frames if filmed on a large-size engineering planetary camera. On a planetary camera the same amount of film is used for each frame, regardless of the reduction. Other items such as reels, cartridges, labels, jackets, print paper, toner, splicing tape, clips, cards, and processing chemicals or service costs should be included in the estimate. Some of these items are costly, and others can be included as miscellaneous and simply added in bulk to each roll or batch.

In an electronic imaging system, the major supply items are the optical disks and cartridges, magnetic disks, and ink-jet cartridges or toner for

laser printers. The number of optical disks required depends on the number of images that will be stored on them. One should refer to the previous chapter to determine how to calculate the number of document images that can be stored on a particular size disk. One should also recall that the number of images that can be stored per inch is also determined by the resolution required and by the compression ratio. This requires, as in the case of microfilm, actual on-site tests, not only for imaging speed but also for image quality, compression, and image storage density. The number of disks not only relates directly to cost per disk, but is directly affected by a decision or requirement to image backfile documents. Fewer disks will be required initially if noncurrent records are stored in hard copy form. However, this decision is based on the number of searches made once current processing is complete.

**Equipment.** The third factor, the cost of equipment, can be assessed in various ways. Some organizations show it as a one-time cost; others ignore it, if this type of equipment is already on premises; and others prorate it over the equipment's expected lifetime. One needs to consult the organization's accountant as to how the equipment cost will be handled and do so accordingly in the costs summary. Because of the expense, equipment maintenance must not be overlooked. Annual service contracts give an accurate budget figure for this expense, including both labor and material. Service contracts frequently cost an annual 10 percent of the purchase price of the equipment. Equipment costs pertain to software and to all hardware, such as cameras, scanners, monitors, readers, printers, computers, jukeboxes, and storage racks. Sales taxes should also be included, and in some areas, there may also be a property tax of some sort, which should be included in annual costs.

Supervision and facilities costs may or may not be considered, depending on the circumstances. For example, if the project does not require incremental supervision expense, such expense is not included in the operations cost.

**Service Bureaus.** Service bureaus are often used when backfile conversions are deemed necessary for either optical disk systems or micrographic systems. However, backfile conversion is generally a costly approach and should be done only after careful study. The alternative is to retain the noncurrent records (backfile) in a manual access system, if the reference rate permits it. Service bureaus are also contracted to do day-to-day work, when turnaround and costs permit. Service bureaus are used for such reasons as lack of equipment, limited staff or limited space to perform the work, and a lack of experience. When service bureaus contract to do the work, they usually quote a price on a document basis rather than as a total job. So, it is still necessary to know exact volumes and other details obtained from the study, and it is also necessary to write job specifications. Materials, however, are usually included in the price quoted by the service bureau.

#### THE FEASIBILITY REPORT

The *feasibility report*, or needs assessment report, is often submitted at the same time as the final office test. In order to obtain an approval from upper management to install a multithousand-dollar or even multimillion-dollar system, a detailed report of feasibility should be prepared and submitted to management.

The report, in simple terms, is a before-and-after picture of the system. It should show the cost of the old system in terms of labor, space, materials, and equipment, and the cost of the proposed imaging system in the same terms. The cost of the proposed system should be appreciably less than the cost of the old system, if the level of system efficiency is the same. If the level of efficiency of the new system is much greater than that of the old system (and that new level is required), there may be an added cost.

The exact format of the report is largely a matter of the particular circumstances and company policy, but a suggested format follows:

- I. Executive summary
  - A. Purpose of study
  - B. Source of data
  - C. Recommendation and reasons
  - D. Brief description of proposed system
- II. Cost-comparison summary
  - A. Cost of old system
    - 1. Labor
    - 2. Space
    - 3. Materials
    - 4. Equipment
  - B. Cost of new system
    - 1. Labor
    - 2. Space
    - 3. Materials
    - 4. Equipment
  - C. Savings or cost on annual basis
- III. Details of cost
  - A. Old system
    - 1. Labor
    - 2. Space
    - 3. Materials
    - 4. Equipment
  - B. New System
    - 1. Labor
    - 2. Space
    - 3. Materials
    - 4. Equipment
- IV. Appendix and Charts

Figure 12.3 is a form that can be used both in writing the feasibility report and in developing and comparing costs. If it is used in the feasibility report, the Explanation or Reference columns are used to indicate an item number which refers to a detailed explanation in the appendix. In addition, this form can serve as a checklist to determine if all factors have been included.

#### THE REQUEST FOR PROPOSAL (RFP)

The *request for proposal* (RFP) is a document usually prepared by the purchasing department of an organization in cooperation with the using department and the systems analysts involved. The

RFP is sometimes referred to as a *bid request* or as a *request for quotation (RFQ)*. A feasibility report is usually prepared as a preliminary estimate prior to the preparation of a *request for proposal*, so that at least ballpark costs and equipment requirements are known before the proposal is requested.

However, the RFP does more than just ask for a price quotation. It describes for the prospective vendors and all of those in the approval chain the overall objectives of the system, that is, precisely *what* the system is supposed to do. It may also specify the type of system desired. The vendor is requested to respond by stating *how* it will be done, what is required to do it, and the cost. However, the vendor may need more specific information to respond to the request.

The type of information that is normally required is a description of the using organization, the current staff and location of operation, and a brief overview of the current methods. It should also provide an overview of how the proposed system is expected to work in the generic plan, while at the same time accepting alternate suggestions from the vendor.

Specific tasks that are anticipated and specifications of systems requirements, such as equipment, data entry, document entry, document description, imaging speed, retrieval speed, number of workstations, workflow requirements, location of network if applicable, and software and hardware integration if desired, should be described. If the system desired is turnkey, it should be so stated, or if the vendor is to provide backfile conversions, details should be furnished. All invited vendors should have equal opportunity for pre-award on-site visits and meetings.

In addition, timetables for submission of proposals and awarding of contracts and implementation, as well as the basis for award, should be clearly stated. Usually, the RFP will provide a tentative system, with an estimated cost, if one has been developed in-house, but alternate hardware, systems, and approaches are often invited. Vendor information should also be requested. This includes a recent financial statement, vendor history, client reference lists, and specific experience or product lines.

SYSTEM COMPARATIVE COST SUMMARY			
<input type="checkbox"/> Initial <input type="checkbox"/> Annual			
System A: _____			
System B: _____			
Cost Factors	System A	System B	Ref
LABOR			
Sorting, Pre-file, Pre-film			
Staple Removal and Prep			
Coding, Indexing, Data Entry			
Filing/Refiling			
Retrievals and Look Up			
Filming/Scanning			
Jacket/Aperture Card Loading			
Programming/Training			
MATERIALS			
Folders and Labels			
Film, Processing & Cartridges			
Optical Disks and Cartridges			
Jackets/Aperture Cards			
Print film			
EQUIPMENT & SPACE			
Maintenance			
Cameras/Scanners			
Readers/Monitors			
Computers/Drives/Software			
File Cabinets/Shelving			
Jukeboxes & Controllers			
Telecommunications			
Floor Space			
TOTAL SYSTEMS COSTS			

**FIGURE 12.3** Cost Comparison Summary  
 (Insurance Records Services, Inc., 9932 Parkway Drive, St. Louis, MO 63137, 800-882-3753)

### IMPLEMENTATION PLANNING

After the vendor selection has been made, all approvals acquired, the system design confirmed, and tests made, there is usually some lead time prior to delivery of hardware. This time can be used for planning for a smooth implementation. This implementation process consists of three phases: training, backfile conversions, and facility modifications and plans.

#### Training

The first step in training is to prepare a detailed procedures manual for the specific project involved. This serves two purposes. It codifies the procedures so that there will be complete uniform understanding of how the work should be accomplished. It describes equipment and supplies to be used, as well as all steps in the operation. The second step is to train the personnel who will actually be doing the work. Often, employees can be somewhat apprehensive about a new project and welcome an early introduction to the new equipment and procedures. If demonstration equipment is available, the employee can exercise hands-on practice in dry runs.

#### Backfile Conversions

Backfile conversion, if required, must be planned for in an organized way. If the analysis indicates that the records to be imaged should be retained, it is necessary to plan a method of storing the records in an inexpensive area, where they can be economically retrieved if necessary. Sometimes, it is less expensive to store the originals for a period of time than it is to check each document for clarity. In most cases, however, the originals may just be retained until a spot check is made, and in the case of microfilm, until processed.

Our analysis may have informed us that we have many documents fastened together with staples. These staples normally must be removed, and the removal may take as long as the imaging. Rather than have the imaging device tied up while

staples are removed and tears taped, it makes much better use of equipment to have preparation and imaging done simultaneously.

At this time, it is important to finalize just how indexing will be done and by whom. It may be done simultaneously by the automatic reading of a bar code or in other ways discussed in Chapter 11.

#### Facility Modification and Plans

When the imaging is done in work-flow processing, a special area is generally not required. In most backfile operations, however, a separate office area should be set aside that is comfortable and well lighted and away from distractions. It is important that the vendor provide exact electrical requirements, so that the electrical requirements can be installed prior to delivery of the equipment. There must be shelving for the records prior to filming or scanning and for temporary storage afterwards. Very likely, the documents will require security during nonwork hours, and so it is best to place the temporary storage in that secured area.

### EVALUATING COMPUTER OUTPUT SYSTEMS

Computer-output microfilm (COM) and computer-output-to-laser-disk (COLD) are the two methods used today to eliminate computer output to paper. COM and COLD technologies have been discussed in previous chapters. However, in this chapter the feasibility, or economic evaluation, of these methods is compared.

#### COM Systems

Although technological marvels, COM systems actually output ordinary microfilm. Therefore, the decision to use COM can be based on data similar to those gathered for a conventional microfilm study. But in addition, it is also necessary to know the cost of producing the identical information on paper using on-line or off-line high-speed laser printers. Ultimately, the cost of paper output versus film output, with attendant expenses, will be

compared and be a major factor in the evaluation process. Such costs may include:

1. Computer costs (allocated)
2. Print costs (allocated)
3. Number of copies needed
4. Paper and forms costs
5. Postage and distribution costs
6. Paper-handling costs

When the current computer and peripheral costs are known, they must be compared to producing and distributing the same number of copies using COM and microfilm readers or reader-printers. The cost of producing COM microfilm depends on several factors such as volume, type of microform, and whether the work is done on in-plant equipment or by an external service company. Estimated COM equipment and supply costs can be obtained from equipment manufacturers, or turnkey service costs may be obtained from service bureaus that may do the work on a contract basis. Organizations that produce high volumes of COM reports may find it advantageous to own and operate their own equipment, whereas lower-volume shops may find it advantageous to use service bureaus. Such a decision is generally based on an economic comparison and security and turnaround requirements.

In addition to costs previously mentioned, the COM recorder has the added advantage of recording a page of output on film, 10 to 20 times faster than a laser printer can print on paper. This speed can have strategic advantage. The use of COM complements normal data storage methods. Although, it is usually desirable to maintain data on disks on-line, it is a reasonable option to store that data on microfiche, rather than tape or disk, after its reference activity peaks.

Generally, where there is wide distribution of computer printouts, COM is feasible. The use of COM often results in an increase in the frequency and number of copies distributed simply because a wider or more frequent distribution of hard copy would have been too expensive. Caution, however, should be exercised to ensure that *unneeded* copies are not produced through COM. This in-

creased distribution can often improve customer service at a minimal cost, even though its use cannot realistically be classified as a savings. All savings are relative, but it is not unusual for a single COM application to save thousands of dollars per year.

Normally, the advantages of COM include a substantial reduction in paper costs. As an example, 4 by 6 microfiche at 42x contains the equivalent of 207 pages of 11- by 14-inch computer-printed paper. This represents an approximate cost, based on 1994 prices, of about \$1.25 in paper. The material cost for the original microfiche is about 20 cents and the copy about 5 cents. Thus COM microfiche represent only 5 to 20 percent of the cost of the paper that would have been used. The cost of mailing COM-generated microfiche as opposed to mailing the equivalent amount of paper is extremely low. In addition, microfiche saves space and is very easy to use.

### COLD Systems

COLD systems, however, do not use film, and hence do not require microfiche readers. Nor do they require any distribution time or costs, other than the network costs, which may already be available. A jukebox, with controller and server, may be required, as are optical disks. These items are not low-cost items by any means, and unless the networks and optical disk imaging systems are already in place, it may be difficult to justify the costs. However, COLD like COM can be produced through an outside service bureau. In such a case, no equipment other than ordinary computer display monitors is required. The service bureau has compatible jukeboxes, disk drives, controllers, and servers. Tapes or disks are delivered via telecommunications to the service bureau, and all retrievals are made on-line without human intervention. In any event, either COM or COLD is justified by the elimination of the costs, computer time, space, and paper associated with standard computer hard copy output. And so, the comparison is narrowed to actually comparing the costs and advantages of COLD and COM sys-

tems. In summary, a comparison of the costs of COLD and COM, both in-house and through service bureaus, appears to show that within a few

years COLD technology will replace microfiche, except for specialized or unique situations, or where an adequate network is not available.

## SUMMARY

An imaging system evaluation study has as its objective determining if documents should be imaged. Problems with an existing system, re-evaluation of existing systems, new technology, or even managerial edict may prompt a system evaluation.

Much of the information gathered to evaluate systems has already been collected in the records inventory form. Such a form can serve dual purposes and be used as a guide to analysis. Retention, protection, and volume; labor, equipment, and material costs; and document flow, are all significant, in addition to color and condition of the documents themselves.

In defining problems, it is necessary to speak with users of the records. Typical problems are lack or cost of space, lack of speed, delays, lost records, and excessive labor costs in handling records. A simplified flowchart can also be useful in defining a problem and in understanding document flow. After a tentative decision is made on the type of system desired, test runs should be conducted, using time and motion methods. In some instances a pilot system may be installed on a smaller scale.

Cost justification normally involves comparing labor, equipment, space, and materials costs of the present system to those of a proposed system. Sometimes, the new system may cost more than the old and still be justified because the newer system specifies a higher level of efficiency. Feasibility studies indicate comparative costs and identify needs. A request for proposal is prepared by the purchasing department and is sent out to vendors with tentative system specifications, requesting prices and proposed methodology.

After the system has been approved, planning for implementation is finalized. This normally in-

cludes specific plans for training and for facility modifications. Training may include hands-on training on- or off-site for operators and others using the system. It also may involve writing job specifications for operators to ensure that consistency is maintained and that the work methods are universally understood. If a backfile conversion is required, specifics on staffing, staging, and tracking, as well as document preparation, must be finalized and specified in the project manual. If the new system is to run concurrently with the old for a period of time, provisions for maintaining order must be coordinated with all users.

Both COM and COLD are electronic methods to eliminate paper reports. The systems are normally justified by comparing their costs with the cost of printing, distributing, and storing paper output. COLD systems differ from COM systems in that COLD also eliminates the microfilm output and the related distribution costs. Most COLD systems use existing networks and computer display terminals. Unless service bureaus are used, COLD systems normally require a jukebox with drives, which can be relatively expensive. COM utilizes relatively inexpensive microfiche readers, and for this reason can sometimes be less expensive than an all-electronic process.

Service bureaus should be considered as an alternative to in-house imaging, whenever this is feasible, especially where equipment is expensive and volume relatively low.

## QUESTIONS FOR DISCUSSION

1. Explain what is meant by a *satisfactory level of efficiency*.

2. Name at least four events that might *trigger* an imaging systems study.
3. Why would it be unwise to presume that imaging is a cure-all solution?
4. List the four phases of the imaging study.
5. How is a fact-finding survey similar to the records inventory studied in Chapter 2?
6. Why would original documents such as titles, deeds, and negotiable instruments be retained in hard copy form?
7. Why is it important to understand the purpose and use of the record being studied?
8. How are additions to the file accomplished by electronic imaging, and how are they accomplished by micrographic systems?
9. How are annotations handled in a micrographic system and how are they handled in EIM?
10. Why is distribution of work important to consider in a document imaging study?
11. Why is it important to know the retention period early in the study?
12. How does the number of documents impact on the imaging study?
13. What is a backfile conversion, and what are alternate ways to handle it to reduce cost and save time?
14. Why are imaging systems best used in a highly active environment?
15. In an imaging system, is space conservation or labor conservation most important? Why?
16. What is the difference between a duplicate information source and an alternate information source?
17. What is meant by a *point of stability* in document flow, and what is the significance?
18. What problems are frequently found in analyzing document systems?
19. List at least four key indicators that often suggest what type of imaging system to use.
20. Why is a request for proposal prepared?
21. What is a cost justification in simple terms?
22. What is the difference between the request for proposal and the feasibility report?
23. What are the three phases of system implementation?
24. What is the essential difference between COM and COLD systems? In what ways are they similar?

#### PROJECTS

1. Review the form illustrated in Figure 12.1a and b and indicate for each block if the information is applicable to no imaging system (N), to an electronic imaging system (E), to a micrographic imaging system (M), or to both micrographic and electronic (ME) systems.
2. Read three magazine articles that deal with micrographic or electronic imaging systems in specific organizations. Summarize each article in approximately 200 words.
3. Write a 500- to 750-word report on electronic imaging systems. Base your report on at least three magazine articles, which you are to identify in a bibliography at the end of your report.
4. Write a 500-word article on the topic "How a Small Company Can Profit From Applying Imaging Technology to Its Records." The article should be suitable for publication in the monthly newsletter of a local chapter of the Association of Records Managers and Administrators or the Association for Information and Image Management.

#### CASE PROBLEM

The Andress Manufacturing Company has decided to make an imaging feasibility study. As the records manager for the organization, you have been given the responsibility. Identify in outline

form, the step-by-step procedures you would follow in developing a feasibility study.

*NOTES*

1. Insurance Records Services, Inc., 9932 Parkway Drive, St. Louis, Missouri 63137, 800-882-3753.

2. Association for Information and Image Management, *Task Force Report*, AIIM/92-114, Annex C. American National Standards Institute, *Technical Report for Information and Image Management: Performance Guideline for the Acceptance of Records Produced by Information Technology Systems, Part II*, ANSI/AIIM TR31-1993.

## Hewitt Associates

Hewitt Associates LLC is an international firm of consultants and actuaries specializing in the design, financing, communication, and administration of employee benefit and compensation programs. Hewitt Associates was founded in 1940 to render an impartial and unbiased consulting service to its clients.

In rendering outsourcing administrative services, Hewitt Associates offers participant services through the Benefits Center. A caller (participant) interacts with a Hewitt Associates representative who is trained in providing the information necessary to make informed decisions. Many of these inquiries revolve around forms sent in by the participants.

In managing participant information through a Benefits Center, it is necessary to provide a balance between enhanced service and reduced operational costs. Imaging technology enables the electronic routing, distribution, storage and retrieval of participant information from the desk top. In addition, it improves client and participant service by enabling representatives to answer participant inquiries without necessitating a return call. However, imaging technology alone does not address all the requirements of a complex records management system.

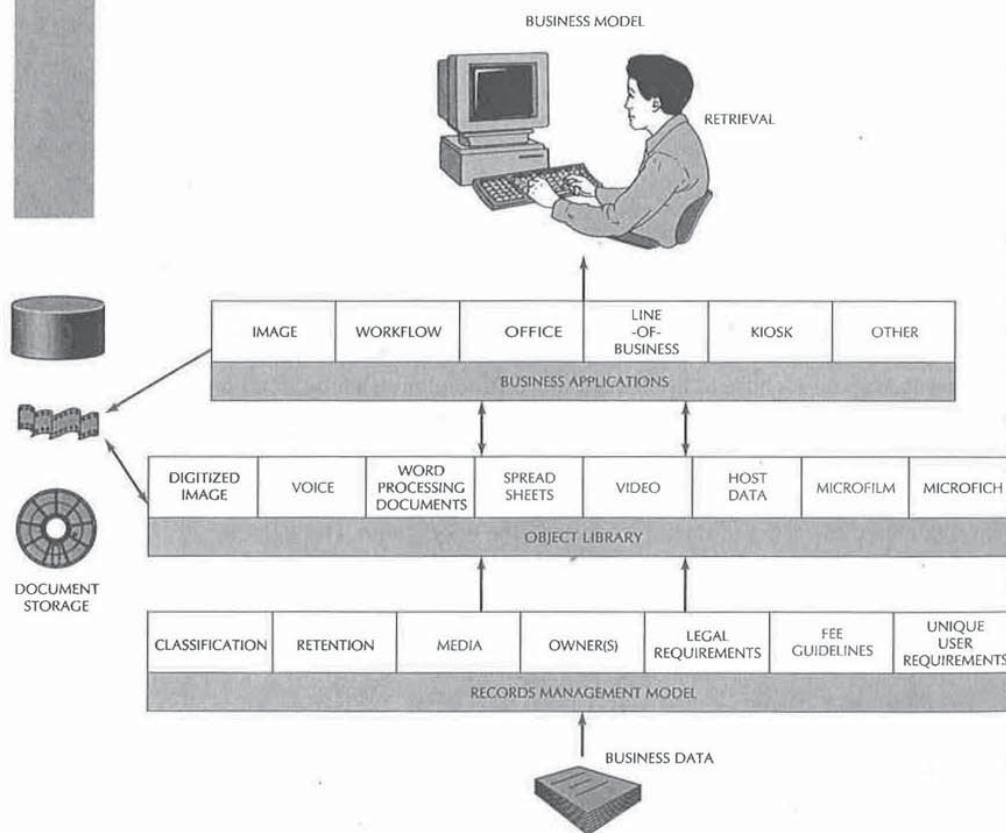
Hewitt Associates chose to implement a hybrid solution because it not only addresses the needs of the users, but also meets the long-term records management requirements of the firm. The benefits of the hybrid solution are threefold: automated records management, a single user interface, and flexible archive media. The hybrid solution provides the users with the necessary pieces of information to do their job, regardless of the format or location of the information. Through the hybrid solution, the user can access digitized images, voice, word processing documents, spreadsheet data, or video.

As part of the implementation of the Hybrid solution, a Records Management Model was developed to define the following characteristics for each record:

- Legal requirements
- Record ownership
- Unique user requirements
- Retention characteristics
- Record classification
- Storage media
- Cost structure

This model provides the foundation for managing all records used by the firm's business process. The hybrid solution implements the model through an architecture that utilizes a central catalog. Users will retrieve all information from the same

end-user interface, regardless of the information's storage location. This is an important feature, because depending on the legal life of the data, it may reside in one of a number of storage mediums, such as: microfilm, optical disk, online disk, and paper. The key to the hybrid solution is its ability in meeting the needs of the business process while maintaining the integrity of the Records Management Model.



## Chapter 18

### *Records Center Management*

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#### Learning Objectives

1. To enumerate the duties and responsibilities of records center personnel.
  2. To describe the various types of indexing methods used in records centers.
  3. To explain some commonly used records center search and charge-out procedures.
  4. To identify procedures for an effective reporting system and reference analysis of the records in a records center.
  5. To outline policies and procedures for establishing a records disposal system for a records center.
  6. To describe a general plan for emergency procedures.
- 

#### OVERVIEW OF MANAGING A RECORDS CENTER

Establishing a well-built, conveniently located, and efficiently arranged records center is only part of the records manager's job. The facility must also be managed professionally if it is to provide low-cost storage of inactive records and fast, efficient reference service. To do this, the manager must also have a well-trained and dedicated staff, cooperation of the users, and efficient procedures.

#### THE STAFF

A well-trained and dedicated staff is very important because no system can be better than the people who administer it. Taking shortcuts or ig-

norance procedural steps can, in time, reduce efficiency; and a lack of care or responsibility can transform the system into a shambles. On the other hand, dedicated and properly trained employees with a positive attitude can make even a mediocre system operate reasonably well. The attitude of the records center staff also affects user relations. A disgruntled or uninterested records center clerk or supervisor may offend the user, who, as a result, may be less cooperative. The cooperation of the user is necessary, because adherence to procedures depends to a great extent upon it. A positive and helpful attitude on the part of the records center staff will convince users that the records center is established for their benefit and that its staff is eager to serve their needs.

## THE USER

Customers or users have the right to expect that every care and precaution will be taken with their records, just as they would expect a bank to safeguard their money. A lack of responsibility on the part of the records center staff is likely to result in a reluctance to use the center's facilities. And rightly so, for depositors would be remiss in their own responsibilities if they placed valuable records in an area that was not safe and secure.

In addition to the security of the facility, depositors have a right to expect adequate controls so that their records will be available when they need them. On rare occasions a record will be misplaced and the user may become very concerned. Such losses can be prevented with proper controls, which are covered later in this chapter. In any event, a lost record is a serious incident, and every possible action should be taken to recover it.

Dealing with people is sometimes trying for even the most dedicated person. "Customers" may not always be right, but they usually think that they are; and the surest way to create enemies is to show them they are wrong.

When a user makes an unreasonable demand or complaint, the manager or the center employee should calmly and tactfully explain why the demand cannot be met or the complaint resolved. After reflection, the user will accept the explanation and will exhibit more understanding the next time. When the user's complaint is justified, it should be acknowledged, the situation should be corrected, and an apology offered if warranted. Acknowledging a mistake not only helps to establish and maintain good user relations, but also provides an avenue of improvement. Reasonable criticism should be accepted gracefully, and the user should be thanked for the suggestion.

Common courtesy and a pleasant telephone response will also improve user relations, and everyday good service will provide the image of efficiency that is desired. But no matter how efficient the records center might be, there will be an

occasional mistake. At those times, previously established good relations will make for a more understanding user.

## Efficient Procedures

The extent to which users will cooperate in following procedures depends largely on their awareness that what they are being asked to do is absolutely essential for an efficient operation. Procedures are sometimes established on a theoretical basis, but every effort should be made to ensure that they are practical and efficient.

This can be done by periodic reviews of all procedures, especially those that affect users of the records center. Procedures should also be streamlined to the point of maximum efficiency. Procedures should not be so rigid that they must be followed with military discipline. For instance, although it reduces the workload of the center staff, there is no absolute justification for demanding that users submit *all* reference requests in writing. This does not imply that procedures should not be established, published, and complied with; but they should be practical and reasonable and permit occasional exceptions.

Although judicious flexibility is required, procedures must be published with exacting details and examples to ensure consistency and continuity of the operation. These procedures should also specify conditions of allowable exceptions so that charges of preferential treatment are not made and so that exceptions do not become greater than the rule. Exceptions can be made only for incidental detail and cannot apply to the fundamental requirements of good control. For example, there can be no exception to the rule that all records withdrawn must be charged out.

## ACCESSIONS

*Accessions* is the term commonly used to describe records received into the records center. Since accessions are a daily occurrence in most records centers, the accession procedures must be formal-

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ized. The first step in these procedures is the transfer list.

### Transfer List

Just as a shipper cannot ship without first preparing a bill of lading or manifest, an office cannot send records to a records center without first preparing a list of the records being transferred. Without this list, the records center would be unable to identify the records, thereby making retrieval virtually impossible. Most frequently called a *transfer list* or an *accession list*, this list is prepared by the office transferring the records. (See Figure 18.1.)

Although the list can be typed on plain bond paper, it is far more efficient to use a prescribed form to ensure uniformity and completeness. The form should be prepared with a minimum of two copies. The original is sent to the records center in advance of the records, and the copy is retained in the office. The procedures of an organization may require additional copies that are filed and used for additional control.

In addition to office identification, the form should show at least the official name of the records series, the span of time covered by the records, and the temporary number of the carton in which the records are placed. Other information, such as the retention schedule number and the destruction date, can be helpful but is not absolutely essential. Office workers often have pet names for records, and it is not too unusual for a record to be known by two or three titles in the same office. These titles are frequently nondescriptive. Therefore, the official name of the record should be the name listed in the retention schedule.

A transfer list may contain more than one series of records, although internal procedures may require a separate list for each series. The records series is listed by name, and *subdetail* information is normally required. For instance, the name of the records series might be "Paid Vouchers," and the subdetail might be the voucher

numbers or segments of the alphabet. If the list contains records of the parent organization and subsidiaries, the corporate names would also be required.

Individual files arranged by subject present some problems in preparing the transfer list. The generic name or series is usually listed as "Correspondence Files," and the subdetail is either alphabetic, numeric, or alphanumeric, depending on the file system. But unless the entire series of files is transmitted at one time, the subdetail has little meaning unless each file number or name is listed. Listing of individual files is very time-consuming because there may be as many as 30 to 50 files in one carton. Listing of only the first and last numbers in the carton is not a suitable alternative because some of the intermediate numbers may not be included and may appear on subsequent transfer sheets, in which case there would be an overlap in series. In this instance, the index to the carton contents is best maintained in a separate card or computer file in the transmitting office. Only the file number or name, the date of transfer, and the carton number should be listed in the card or computer index. In such a situation it is necessary that the transmitting office, when requesting these records, provide the records center the carton or space number assigned, as the records center would not have this information in its index.

There is, however, a method of batching that avoids the problem of missing numbers in a file series, e.g., grouping by the year the claim was closed, or by the year in which an employee was terminated or retired, in the case of personnel files. Although there may be missing numbers, they do not overlap with other accessions since this number series is complete and it contains *all files closed* in a particular year. However, it is necessary to know the year the file was closed.

The span of time covered by the records series, shown on the transfer list, is usually very important, not only for identification but most importantly for disposal purposes. The span of time is usually very clear-cut on accounting

records, but for files such as subject correspondence files, claims files, and personnel files the span of time on each file will probably vary greatly within a carton. In this case, usually the oldest date in a carton and the most recent date are shown to give some indication of the age of the files. This, however, *cannot* be used for disposal purposes, but the batch grouping can.

A temporary transfer number is assigned to and written on the carton by the transmitting office. It is used only for identification purposes until the carton is assigned a permanent records center space number. The temporary number on the carton is matched with that number shown on the transfer list when it is accessioned.

### Transfer Approval

When the transfer list is received in the records management office or the records center, the staff reviews it for completeness, continuity, and eligibility. The completeness check involves making sure that all records on the transfer list are physically accounted for, that the correct name of the record is shown, and that the subdetail is sufficient for retrieval. The continuity check entails reviewing past accessions of that records series to verify that all prior records have been received (i.e., the oldest records should be accessioned first). The eligibility check involves checking the record items on the transfer list against the retention schedule to determine if they are eligible for records center storage. It is for this reason that many organizations require the retention schedule number to be shown on the transfer list. Listing this number not only facilitates checking in the records center, but it also serves as a reminder to the sending office that only authorized records may be stored.

### Pickups

When the transfer list has been approved, the shipment is scheduled for pickup. Pickup procedures will vary for each organization; they depend on the location of the records center, union agree-

ments, and organizational structure. Frequently, the mail or messenger department will handle the pickup, but sometimes it is done by records center personnel. The frequency of pickups will depend on the volume and distance. If the records center is located in the same building as the offices, it can be done on a daily basis. If it is some distance away, a truck will be required, and pickup will probably be scheduled on a weekly or semi-monthly basis. The transmitting office should be notified of the pickup date and any changes that are made in the schedule.

### Space Assignments

When the records are received in the records center, they are normally placed in a staging or processing area where they are checked against the transfer lists. If all cartons shown on the transfer list are accounted for, the shipment is ready for space assignment.

Space numbers are normally assigned to, and written on, the carton in the processing area. To accomplish this, the records center must have a complete and current register of space vacancies. Without such a register, space assignment would be practically impossible. Even if all vacancies were visible, a physical inventory of available space would be very time-consuming and inefficient.

A manual register of available spaces can be maintained in several ways, all of them similar. The manual systems described here can also be computerized. The principle of all of these systems is the perpetual inventory. With this system, as spaces become vacant they are added to the register, and as they are filled they are removed. The system varies according to the format of the register. Some registers consist of a page of plain paper for each row in the records center. As a space becomes vacant, the space number is written on the sheet; as the space is filled, the number is scratched off. This is perhaps the most basic method and can be used with success when the vacancy rate is relatively low. However, if there are a large number of open spaces, searching for a

Dept	Sect	Page	Box No.
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FIGURE

Dept	Accounting	RECORDS CENTER INDEX and TRANSFER LIST				Control Number	
Sect	Payables					950	
Page	1 of 1						
Box No.	Description of Record(s)	Date		Record Center Space Number	Title Code	Function Code	Retention Period
		From	To				
	PAID DRAFTS	Jan	Jun		179	55b	6 yrs
1	00001 - 01578			10014			
2	01579 - 02852			10015			
3	02853 - 04215			10016			
4	04216 - 07514			10017			
5	07515 - 08950			10018			
6	08951 - 10450			10019			
7	10451 - 11917			10020			
8	11918 - 14329			10021			
9	14330 - 16744			10022			
10	16745 - 18009			10023			
11	18010 - 21710			10030			
12	21711 - 23002			10031			
13	23003 - 25119			10032			
14	25120 - 27900			10033			
15	27901 - 30005			10034			
16	30006 - 31074			10035			
17	31075 - 32224			10036			
18	32225 - 34015			10037			
19	34016 - 36310			10038			
20	36311 - 37450			10039			
21	REPORTS OF DRAFTS ISSUED A to L	Jan	Dec	10040	210	55d	2 yrs
22	M to Z			10041			
For Storage in: <input checked="" type="checkbox"/> General Record Center <input type="checkbox"/> Security Record Center							
Name of Person Transmitting Records <i>John Doe</i>		Phone No. 3353	Room No. 2010	Location Fall Winds	Date 1-3-1994		

FIGURE 18.1 Records Center Index and Transfer List

RECORDS CENTER CONTROL CARD				DEPT.	052 Accounting			
				SECT.	Payables			
				RECORD TITLE CODE	052-179			
Function Code	55b	Record Title	PAID DRAFTS		COMPANY NAME			
Company Retention	6 yrs	Also Known As	Cash Vouchers		XYZ Company			
Dates	Transfer Control Number	Sub Detail	Space Number	Dates	Transfer Control Number	Sub Detail	Space Number	
JAN-JUN 94	950	00001-01578	10014	JUL-DEC 94	954	65075-68921	40402	
		01579-02852	10015			68922-74011	40401	
		02853-04215	10016			74012-77981	40401	
		04216-07514	10017					
		07515-08950	10018					
		08951-10450	10019					
		10451-11917	10020					
		11918-14329	10021					
		14330-16744	10022					
		16745-18009	10023					
		18010-21710	10030					
		21711-23002	10031					
		23003-25119	10032					
		25120-27900	10033					
		27901-30005	10034					
		30006-31074	10035					
		31075-32224	10036					
		32225-34015	10037					
		34016-36310	10038					
		36311-37450	10039					
JUL-DEC 94	954	37451-38319	40221					
		38320-39441	40222					
		39442-40317	40223					
		40318-42211	40224					
		42212-44016	40225					
		44017-45098	40226					
		45099-46980	40227					
		46981-47889	40228					
		47890-48942	40229					
		48943-49820	40230					
		49821-59052	40400					
		59053-65074	40401					

FIGURE 18.2 Records Center Control Card

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particular number could be very time-consuming. A more efficient method is to list all space numbers for a row in sequence on a page. These space listings can be computer-generated using a personal computer and printout. As the space becomes vacant, the number is checked with pencil. As it is filled, the check is erased. This method has the added advantages of placing the numbers in serial order and of showing vacancies in serial order. If all rows contain the same number of spaces, the preparation of the basic form is quite simple, for one form will serve for all rows. However, if the rows vary in the number of spaces, the form must be altered to suit the capacity of each row.

Another method of maintaining a space inventory is to write a vacancy number on a 3- by 5-inch card and to file the card in numeric order. Cards are not maintained for filled spaces. When assignments are made, the cards are simply removed and no search is required. The cards are then taken to the processing area and fastened to the carton. When the cartons are destroyed, the cards are removed and refiled as a space vacancy. Other variations of these methods, including the use of computer databases, can be devised to meet the needs of specific organizations.

Sections of a records center should not be reserved for the exclusive use of a particular department or office. Allocation should be random, and assignment made on the basis of availability. By assigning space on an availability basis, every single cubic foot can be used. However, some discretion should be used in making space assignments. Records that appear likely to be more inactive than average are assigned to less accessible spaces, such as the higher shelves and rear spaces. Records that have more valuable information may be assigned to certain areas where proper protection is afforded. In addition, when possible, the records of the same series should be kept together, because this simplifies disposals and references.

After the space assignments have been completed, the records are placed on the shelf whose number corresponds to the number on the carton.

If the records are not contained in cartons, perhaps because of irregular size, the space number is written on the records as they are placed on the shelves. Finally, the space number is written on the transfer list adjacent to the appropriate item as the records are placed on the shelves.

## MANUAL INDEXING METHODS

Because a records center may serve more than a hundred different offices and contain more than a thousand separate series of records, a good indexing system is essential. The most common manual systems are the *control card system* and the *transfer list system*. There is a third system that combines elements of these two; we will call it the *control card-transfer list system*.

### Control Card System

The control card system consists of a ledger sheet or card for *each records series* held in the records center (see Figure 18.2). These cards are kept in departmental (retention schedule) order in either alphabetic order by records series title, or numeric order by title code. Each transaction (box or space number) shown on the transfer list is posted to these cards. If the transfer list contains 22 boxes, there will be 22 entries on the control card. This operation involves a complete transcription. The transfer list (see Figure 18.1) should include all data necessary for retrieval, such as the date span, the space numbers for each carton, and the subdetail description of the record. Although this system requires the additional task of transcribing, it is still highly efficient, provided transcription errors are minimal. As a precaution against such errors, the transfer lists are usually retained in departmental order. With this system, the burden of locating the space numbers is placed on the records center staff.

A search of the index is conducted by (1) locating the control card for the records series

requested, (2) searching subdetail for the proper space number, and (3) retrieving the records.

### Transfer List System

With the transfer list system, both the department and the records center maintain copies of the transfer list. These lists are searched to secure the space number assigned to a given record. This system works reasonably well if the transfer list is limited to one series per sheet. If more than one series is listed on the same transfer list, searching becomes progressively more difficult as the lists accumulate. The system's chief advantage is that no transcription from the list to the control card is involved (see Figure 18.1).

A search of the index is conducted by (1) scanning copies of all transfer lists submitted to the records center for prior accessions, (2) locating the correct space number by cursory review, and (3) retrieving the record.

### Control Card-Transfer List System

The control card-transfer list system is a marriage of the first two systems. Basically, this system involves maintaining an index to transfer lists that contain one or more series of records. The steps in this procedure are as follows:

1. Maintain a control card or ledger sheet for each series of records, as is done in the control card system.
2. Assign each transfer list an identifying number as it is received.
3. Post to the control card from the transfer list only the date range of that series and the *transfer list* number. This eliminates posting all subdetail and space numbers. (See Figure 18.3.)

Search of the index is done as follows:

1. Scan the record series control card to find the date range and corresponding transfer list number.
2. Retrieve the appropriate transfer list, which is in numeric order by department.
3. Scan the appropriate transfer list for specific record identification and space number.

The advantages of this system are that it reduces transcribing to one entry per record series for any one transfer list and still provides a systematic method for locating the proper transfer list when retrieval is required. Because all retention requirements may be shown on the control cards, they can be used to determine specific destruction eligibility.

### SEARCH AND CHARGE-OUT PROCEDURES

Stack areas should be closed to everyone except authorized records center personnel. Without this restriction, controls and security would be impossible in many areas. If the records center is located within the same building as the offices it serves, it is possible that some work-in-file activity may be allowed for a limited number of outside personnel. If proper instruction and a watchful eye are provided, there may be no serious problems; however, it is best to discourage permitting unauthorized personnel into the stack area.

### Record Requests

Users of the records center may be required or encouraged to request records in writing on a prescribed form and to provide space numbers through an index search previously described in order to reduce work for the records center staff.

RECORDS CENTER RELATIVE INDEX				DEPT.	052 Accounting		
				SECT.	Payables		
				RECORD TITLE CODE	052-179		
Function Code	55b	Record Title	PAID DRAFTS				
Company Retention	6 yrs	Also Known As	Cash Vouchers				
Dates	Company	Sub Detail	Transfer Control Number	Dates	Company	Sub Detail	Transfer Control Number
JUL-DEC 90	X4Z	50152-95000	650	JAN-DEC 94	ADK	0002-8914	952
JAN-JUN 91	X4Z	00001-48150	704	JAN-JUN 94	UOP	0501-0982	953
JUL-DEC 91	X4Z	48151-97072	744				
JAN-JUN 92	X4Z	00001-54010	801				
JUL-DEC 92	X4Z	55011-92017	892				
JAN-JUN 93	X4Z	00001-42110	907				
JUL-DEC 93	X4Z	42111-78529	925				
JAN-JUN 94	X4Z	00001-37450	950				
JUL-DEC 94	X4Z	37451-79080	954				

FIGURE 18.3 Control Card-Transfer List System

If the requests or charge-out forms are prepared in the requesting office, the time spent will not be significant and can be absorbed without overtime or added personnel. But if all form preparation and space-number lookup is performed in the records center, the workload may require hiring additional personnel. While clerical time required to complete the form is not significant, lookup of the space number in the indexes, can usually be accomplished more easily by the department owning and requesting the record. Other managers will argue that the records center exists essentially to provide reference service and should therefore have a large enough staff to perform that service. The system used is a matter of management policy, which each records manager will have to

decide. In many records centers, telephone requests or electronic mail are encouraged, particularly if there is significant distance involved. Fast service is good service, and anything that will expedite information retrieval should be used, including facsimile transmission, on-line computer systems, teletype, or telephone, as long as it is economically feasible. The charge-out form is frequently used to make a request for a record. If the request is received by telephone, the form is prepared by the person taking the request. Otherwise, it is prepared by the requestor. In a large records center, it often becomes necessary to have requestors furnish a personal identification number to ensure that records are not charged out to the wrong individual.

### Charge-Out System

A fundamental control in records management is the *charge-out system*. In essence, it is simply making a record of a loaned record. The principle of this system is commonly used in many occupational areas other than records management. For example, it is used in lending libraries, equipment rental firms, and banks. In the case of records management, a document is being loaned and the charge-out form is the record of that loan.

The charge-out system is used (1) to keep track of a record while it is outside the records center, (2) to ensure its return, and (3) to provide follow-up analysis. A simple charge-out method is to record the name of the requestor, the record identification, and the date on a cardboard form. The form is then filed in the container in place of the record withdrawn.

Usually, however, the charge-out is a snap-out form, completed in triplicate. The form must contain at least the name, telephone number, and location of the requestor; the name and full description of the record; the space number; and the date. The first copy replaces the record in file, the second copy is attached to the record as a routing slip, and the third is placed in a suspense file for follow-up, if required. Additional copies may be used for reference analysis of various sorts and for other purposes (see Figure 18.4).

Considerable search time can be saved if, instead of making special trips to the stack area for each request, the requests are accumulated and put in space-number order, thus reducing travel time to and from the stack area. However, turnaround time and frequency of requests may not permit this batching.

When the records are located, the routing copy of the charge-out form is attached to the record, transmitting it to the requestor, and the charge-out portion is placed in the carton in lieu of the record being removed; it should be visible from the top of the box. Because the form is often quite small, it should be attached to a sheet of cardboard, 8 1/2 by 11 inches in size, so that it can be seen in the carton. If the record cannot be

located, a "Not in File" notation, the date, and the initials of the searcher are written on the request form, which is returned to the requestor.

If the record is charged out when the search is made, the name of the party to whom the record is charged, the date of the charge, the date of the search, and the searcher's initials or number are written on the request form and returned to the sender. It is a matter of policy whether records center personnel or the requestor contacts the party who has the record. Generally, it is better for the requestor to make the contact, because he or she knows how long the file will be needed or what information is needed. In any event, the charge-out in the file should be flagged so that the second requestor will receive it when it is returned. If the original holder of the record gives it to a second party, the records center should be notified, and a new charge-out should be made to the second party.

In the case of a charge-out or a "Not in File" search, the reference analysis portion of the search request form should be retained in the records center file for future analysis of reference activity, just as though the record had been retrieved. Also, it is usually advisable to notify the requestor immediately by telephone or fax if the records cannot be located or if they are charged out.

### Deliveries

Frequency of deliveries depends on the distance and turnaround time requirements. Because deliveries are smaller in volume than pickups, interoffice messenger service may normally be used on a daily basis. Sometimes, requestors will state "Call when record is ready." In this case, the requestor will pick the record up personally.

### Follow-Up Procedures

Most records are returned to the records center within a week or two after they are charged out. However, there are always a few that are not returned until the holder is reminded that he or she should do so. Usually, the reminder is a form

RECORD CENTER CHARGE OUT					
FORWARD RECORD TO	NAME	JOHN DOE		ROOM	TELEPHONE
	DEPARTMENT/SECTION	ACCTG, PAYABLES		DATE	2-1-93
DESCRIPTION OF RECORD					
RECORD TITLE		Paid Draft			
SUB-DESCRIPTION		12141			
COMPANY NAME		XYZ Co			
DATE OF RECORD		MAY 3 1993			
SPACE NUMBER		10021		<input type="checkbox"/> PERMANENT WITHDRAWAL	
BELOW FOR RECORD CENTER USE ONLY					
<input checked="" type="checkbox"/> RECORD ATTACHED		<input type="checkbox"/> NOT IN FILE			
<input type="checkbox"/> NOT IN FILE-CHARGED TO		NAME	ROOM	DATE	
DATE SEARCHED		2-1-93		SEARCHER #	W/200
DATE REFILED				SEARCHER #	

TO ROUTE

**TO**

**RECORD CENTER**

Room 10, Basement

**CHECK THIS BOX**

☐

(LEAVE FORM ATTACHED)

FIGURE 18.4 Record Request and Charge-Out Form

letter to which the suspense copy of the charge-out is attached.

The suspense copy is filed in a tickler file in the records center office, at time of charge-out, usually to be called 30 to 60 days from the charge-out date. As records are returned, the follow-up or suspense copy is removed from the suspense file. On the final due date, the remaining cards are removed and attached to overdue notifications, which are sent to the holder of the record or the holder's immediate supervisor, depending upon policy. A photocopy of the notification form and attachment is often made so that a second follow-up can be done if the first one brings no results. If all else fails, a telephone call or personal visit may result in a return of the record.

If the holder of the record indicates that the record will be needed for an extended period of time, the suspense copy of the charge-out form should be refiled, and the whole process should be repeated. If the holder claims that the record has been returned, then a thorough search of the processing areas and the office areas should be made

as well as a second search in the stacks. If all these efforts fail to locate the record, a notation explaining the events should be made on the charge-out form in the stack file and the form should remain there until the record is returned. The suspense date for return of charge-outs should be realistic; a time period that is too short will simply mean that more notifications are required than necessary. If a record is reactivated and remains in the office, a permanent withdrawal charge-out should remain in the file for as long as the series is retained in the records center.

#### REFILES AND INTERFILES

Although refiles and interfiles are quite similar, some differences should be noted. *Refiling* is the process of filing records that have been charged out. *Interfiling* is the placing of documents into containers that were previous accessioned in the records center.

The refileing process is somewhat faster and easier than the interfiling process because there is

a charge-out form that directs the clerk to the proper place in the carton. When a record is refilled, the charge-out form should be removed from the carton and the routing slip should be detached from the record and matched with the charge-out to ensure correct refiling. This matching is very important: A misfile in the records center is extremely difficult to find because of its random space arrangement.

An interfile, on the other hand, poses several problems. First of all, an index search may be required to determine the correct space number, if that is not known. Secondly, the records center clerk must not only find the proper place in the carton to file the record, but must also be certain that space is available for the record. This latter point is not always easy to judge if some records are currently charged out of the carton. Because of the space problem, files sent to the records center should be complete when accessioned and interfiles should be discouraged.

If a carton is filled and records still remain to be filed, the records are placed in an overflow carton, which has its own space number. A cross-reference that refers the searcher to the overflow carton should be placed in the original carton. One overflow carton will usually serve the overflow of more than one records center carton. Thus documents in the overflow carton should be filed by the space number of the original carton, and the carton should be subdivided by guides indicating row numbers.

#### DISPOSALS FROM THE RECORDS CENTER

The records manager is the custodian of the records in the records center and not the owner. Therefore, the records may not be destroyed without the concurrence of the owner and those authorized to approve destruction. Although the records retention schedule indicates when a record will be eligible for destruction, there are many events, such as pending lawsuits, merger negotiations, hearings, and new laws and regulations, that might cause a hold order to be placed on the records. The final approval of the record owner limits pos-

sible premature destructions and also strengthens the confidence of the user in the records center. This procedure does not weaken the purpose or effectiveness of the retention schedule, but rather complements it. Without such approval, longer retention periods would probably be required because of uncertainty and the "just in case the record is needed" attitude that so often prevails.

Suspensions of the retention schedule should only be made when authorized by the law department or some corporate official. Technically, the owner of the document may for valid reasons recommend that the record be retained beyond the prescribed period. Although only a recommendation, this request is in most cases a valid reason to suspend the retention schedule.

#### DISPOSAL SYSTEM

Even though final approval is required of the owner, the records center initiates the destruction process. To do this effectively and efficiently, a system is needed.

The disposal process actually begins when the records are originally accessioned into the records center. As a part of this process, the future date of destruction is noted on the transfer list and one copy of the list is filed in a suspense file by the earliest destruction date shown. When that date arrives, the descriptive information on the records is transferred to a destruction authorization form either by attachment, transcription, computer, or photocopy. After the form is prepared, it is sent to the originator of the records transfer for approval to destroy. Figure 18.5 is a sample disposition authorization form.

If there is more than one destruction date shown on the transfer list filed in the suspense file, the records destroyed are crossed off that list after disposal and the transfer list is refilled by the next upcoming destruction date shown. In lieu of retyping the description on a destruction form, the transfer list can be converted to a destruction form by using a form overlay and an office copier.

Another system, which is based on the same principle, uses 5-by-8-inch cards that are filed by

RECORDS DISPOSITION AUTHORIZATION			
<input checked="" type="checkbox"/> XYZ COMPANY <input type="checkbox"/> OTHER COMPANY		NO. 80001 Page 1 of 1	
NAME & TITLE: John Jones, Supv., Records Center		DATE: January 4, 19 9-	
LOCATION: Fall Winds Campus		APPROVED: <i>John Doe, Mgr Acctg</i> <small>(Signature of person responsible for records)</small>	
		APPROVED: <i>Gery Bishop, RM</i>	
The above individual is authorized and directed to destroy the following records:		APPROVED: <i>SSP Kennedy</i> <small>Controller</small>	
FORM #	NO.	PERIOD FROM TO	RETENTION SCHEDULE ITEM #
	Paid Drafts #50152 - 95000 /////NOTHING FOLLOWS/////	Jul 1 199- Dec 31 199-	052-179
I disposed of records listed on this form by <input type="checkbox"/> Burning <input type="checkbox"/> Shredding <input checked="" type="checkbox"/> Salvage			
Signature <i>John Jones</i> Date Jan 10, 19 9-			
RETURN ORIGINAL FORM TO RECORDS MANAGEMENT OFFICE-ST. LOUIS AFTER DISPOSAL			

FIGURE 18.5 Records Disposition Authorization Form

year and month. When a transfer list is received, the number assigned to the list (or its date and source) is transcribed onto the card. When the due date arrives, the card is pulled; it refers the records manager to the proper transfer list. The advantage of this system is that it eliminates filing the transfer list in the suspense file. A personal computer may serve the same purpose as the card file, using fairly common packaged software such as a calendar or date file. The file need contain only the transfer list number, so that it can be retrieved and converted to a disposition authorization form on a given date.

#### Authorization Form

When the destruction authorization is prepared, it is sent for approval to the office where the records

originated. If some records are to be held for a longer period, the reason should be stated in writing, a new destruction date should be assigned, and these items should then be deleted from the authorization. When the authorization is returned to the records center, the space numbers covering those records approved for destruction should be listed separately on 3- by 5-inch cards and the cards should be arranged in numeric sequence. With these cards used as a pull list, the records are removed from the shelves and the appropriate card is attached to the carton with tape. The attached card can be used as a check to ensure that the proper carton has been removed.

After the accuracy check, the cards should be removed from the carton and filed in a space-availability file, if such is the system, or used to post entries on a space-availability register. Also,

there is an obvious change in work flow patterns. This analysis will enable the records manager to know the following:

## FIG

- How many references are made for any given records series.
- The age of the records that are being referenced.
- The number of records that cannot be located or charged out.
- Who uses the records center.
- When the records are used.
- How old records are when they cease to be used.
- Where high-activity records are located in the records center.

To make this analysis, statistics are accumulated on a per-action basis by filing a copy of the charge-out form in a reference analysis file or through computer data entry. This file is designed to accumulate data in a functional manner and may be arranged or sorted in one or more of the following ways.

1. *By record series.* To determine the number of searches, the time span of the records searched, the number of "cannot finds" and charge-outs, and the source of the request for this records series.

2. *By user or owner of the record.* To determine the types of records used, the age of the records used, the number and frequency of requests, and the number of follow-ups required by this user.

3. *By date.* To determine the source of the requests and periods of high or low activity on a particular records series.

4. *By space number.* To determine the high and low activity areas in the records center.

[illegible]

basis the clerks who conduct the searches can tally the number of searches per day, per month, and per year. This can produce an aggregate total or be analyzed by department, division, or unit. Figure 18.6 shows an annual and monthly breakdown of the number of searches by departmental user.

### Projections of Space Needs

Most records centers show at least a gradual growth in volume due to hold orders, mergers, and increased business. As the demographer projects the population of the world, so must the records manager project the records "population"

FIGURE 18.6 Reference Analysis Report

REFERENCE ANALYSIS REPORT													
Department	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOT
Secretary - 01	0	0	0	0	0	1	0	2	0	0	3	0	6
Treasurer - 02	0	0	0	0	0	1	0	0	0	0	0	0	1
Executive - 10-11-12-13	42	5	6	3	4	7	4	1	4	9	41	15	141
Profit Planning 07-08-09	1	3	16	10	4	1	1	16	1	6	2	0	61
Info & Con Sys 15-16-17	0	0	0	1	2	4	3	1	0	0	3	2	16
Law - 20-21-22-23-24	10	22	13	10	11	4	6	7	8	15	6	6	118
Operating - 30 - 43	27	33	23	9	12	26	12	8	13	20	19	11	213
Traffic Analysis - 44	2	1	0	0	0	1	3	0	0	3	0	0	10
Traffic Commerce - 45	14	18	17	10	4	7	10	3	10	5	3	4	105
Traffic Corresp - 46	0	0	0	0	0	0	0	0	1	0	26	0	27
Traffic Divisions - 47	40	28	23	31	12	8	17	21	37	30	21	15	285
Traffic Rates - 48	136	185	254	154	238	224	150	153	170	148	196	129	2137
Traffic - Sales - 49	0	0	0	0	0	0	0	0	0	0	0	0	0
Pur & Matls - 55	47	24	39	19	12	21	19	30	8	9	347	15	490
Truck Lines - 59	21	6	6	4	14	4	2	26	7	59	3	2	154
Missouri Imp Co - 60	0	0	0	0	1	0	0	0	0	0	0	0	1
AFT Co - 61	8	2	0	1	197	1	2	0	3	9	19	3	245
C&EI Sec & Treas 03 - 04	11	0	0	0	0	0	0	0	0	0	0	0	11
Auditing - 65	788	1877	1590	421	1441	340	893	2724	1072	947	1768	1645	15576
Budget - 66	37	94	2	13	0	1	9	72	0	1	0	0	229
Fin Acctg - 67	0	0	0	3	0	0	0	0	0	3	0	0	6
General Accts - 68	0	1	1	1	7	3	1	0	0	1	0	0	15
Statistics - 69	0	0	0	0	8	3	0	24	0	0	0	0	35
Texas - 70	416	517	8	379	1512	7	10	135	5	0	26	115	3133
Disb - Bills - 74	27	14	14	12	15	13	9	17	26	13	13	8	181
Disb - Matl - 75	0	2	5	0	0	0	0	0	0	1	0	0	9
Disb Payables - 76	995	20	26	169	49	65	314	583	56	242	55	43	3617
Disb Payroll - 77	1	1	19	4	2	4	1	2	11	4	1	0	50
Fri Rev Acctg - 80	67	71	54	91	87	85	91	79	110	67	77	52	931
Personal Station - 85	17	38	39	29	37	78	50	66	44	36	34	33	561
Passenger - 88	0	0	0	0	0	0	0	0	0	0	0	0	0
Mail Acctg - 89	0	0	0	0	0	0	0	0	1	0	0	0	1
ECE - 90	110	60	133	187	118	187	113	120	159	55	143	79	564
Car Accounting	17	4	8	18	0	1	1	10	0	0	1	2	62
TOTAL FOR MONTH	2834	3026	2296	1579	3788	1098	2721	4100	1746	1783	2807	2179	29957

of the records center. Waiting until there is no more space indicates a failure in advanced planning. At that point, the records center cannot accept any new accessions, and consequently, records transfers back up in the offices and create chaos in the office records systems.

Statistical analysis for this situation is primarily concerned with accession and disposal ratios. If the volume of records taken into the records center exceeds disposals from the records center, sooner or later, if nothing changes, the records center will be filled to capacity. The challenge is to determine when this is likely to happen and to prevent it. To estimate the full date, it is necessary to look at typical accession and disposal volumes from the past few years and apply those historical numbers to the future. If the full date appears to be a year or more in the future, plans should be made immediately to provide a remedy. If it is less than that, you are in an emergency situation and action should be initiated as soon as possible to eliminate or reduce the problem. Possible solutions to the problem include:

1. Review the retention schedule to try to reduce retention periods to provide for additional disposals.
2. Review the hold-order file to see if some of the records being held beyond normal retention periods can be destroyed.
3. Perform a reference analysis to determine high-volume, low-reference records that may be considered for a reduced retention period or off-site storage.
4. Contract with a commercial records center to provide a quick and inexpensive solution, particularly for hold-order records or other high-volume, low-reference records.
5. Look into additional in-house space through expansion or a larger records center. This is the least desirable alternative, but it may be necessary.

#### INTRACENTER TRANSFERS

Once records are accessioned into the records center, it is generally best to leave their space

assignment number unchanged. Changes sometimes become necessary, however, because of unexpected reference activity, the threat of water damage, facility modification, transfers to a commercial records center, or some other reason. When this occurs, all indexes, such as control cards, transfer lists, the space registry, and the cartons themselves, must be altered to reflect the new space numbers. This pebble-in-the-pond effect can create a stifling work load, so changes should be made only under the most urgent circumstances. Changing the space numbers on the various indexes is not only time-consuming, but is often difficult unless assisted by other indexes.

If the system is computerized, a listing of the records being moved can easily be provided in space-number order together with descriptions of the records. With this listing, the new space number can be written adjacent to the old on the listing as the carton is placed on the shelf. At the same time, the space number written on the carton should be changed to the new space number. Later, the new space number can be entered into the computer database to update the system. In the meanwhile, the temporary listing in old space-number order can be used as an index from the old number to the new for search purposes.

If the transferred carton has the department name, record title, transfer number, and space number written on the outside of the box, as required by many organizations, that information together with the new space number can be entered onto a transfer list as the records are being accessioned into the new space. The old number should also be noted on the list so that other indexes can be updated later.

If neither of the above situations exists—completely labeled cartons or a computerized system—then it is necessary to identify the records and their owners. From this information, the transfer list used to transmit the records to the records center can be located and used to accession the cartons to the new space. At this point, the reaccessioning procedures are the same.

To avoid duplication, the emptied spaces should not be reused until all indexes containing

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the old space-number listings are changed to the new.

#### MOVING A RECORDS CENTER

Moving a records center involves not only transferring the records from one place to another but also reassigning space numbers. When an entire records center is relocated, the changing space-number assignments is much more critical and time-consuming than with intracenter transfers. This is so because the volume of records is greater and also because *all* search, refile, and interfile activities are affected.

If a straight sequential numbering system is used in the old records center and will be used in the new, there is no space assignment problem because the cartons are simply moved to their like-numbered space in the new center.

#### Space-Number Conversion Table

If new space numbers are to be assigned in the new center, a table should be developed that will serve as an index to convert the old number to the new. In addition, this table must be completed as the records are moved so that the new records center can be completely operational upon occupancy. The table should list the old carton number in numeric sequence and, adjacent to it, the new number. This is done as the cartons are placed on the new shelves, with the result that the conversion table index is created at the exact time the change of space actually occurs. From this table, indexes can be changed and new locations determined quickly by referring to the old number to determine the new.

If new shelves are to be installed and numbered, this should be done prior to the transfer of the records to minimize interruption. If the old shelves are to be moved with the records and reinstalled, it will be necessary to have a temporary staging area until the records can be moved to

the new shelves. This can be done in phases, so that only a portion of the records are in the staging process at one time. For example, the contents of ten rows of shelves can be staged on pallets as the shelving housing them is partially disassembled, moved to the new records center, placed in its proper place, and numbered according to the new plan. When the shelving is ready, the staged records can be moved and accessioned. The process repeats the procedure until all records have been transferred.

#### ACTIVITY REPORTS

Specific work quotas for records center personnel are usually not recommended because employee pressure has been known to cause misfiling and inaccurate reports. In addition, time requirements for records center actions are so variable that equitable quotas are not feasible. Although quotas cannot be applied to an individual's output, statistical projections, based on production reports, can be used to justify staffing needs; to compute the backlog of personnel work hours; to estimate time requirements for accessions, disposals, and indexing; and to estimate cost savings through use of the records center.

In addition, a weekly or monthly report of overall records center activity will provide valuable statistical information to the records manager as previously described. The report, prepared by the records center supervisor, should contain the number of references, refiles, and interfiles; the number of cubic feet accessioned and destroyed; and the amount of vacant space available. These data are accumulated from the daily reports of the records center clerks and from the accession and disposal activities.

It is important that the calculation method be standardized for the various records center actions. Usually, each record or file requested is counted as a search. If the record is not in the file because of a previous charge-out or cannot be located, it is still counted as a search. If different records requested happen to be in the same carton,

they are still counted separately. However, if an entire carton is requested, without reference to specific records in it, the request is counted as only one search. Refiles and interfiles are counted on the same basis.

The special search should be defined and counted separately. Usually, a special search is conducted when a record cannot be located through the normal procedures. It should only be conducted with the approval of the records center supervisor. Often a call to the requestor will reveal that the information can be found elsewhere or that the record was never sent to the records center. If the call to the requestor indicates that the record is essential and that it was sent to the records center, a special search should be conducted. Even when a special search is warranted, there are only so many reasonable possibilities that can be tried. When these have been exhausted, the search should be ended.

#### EMERGENCY PLANNING

The first consideration of emergency planning should be the protection of lives. Emergency planning must be tailored to the individual circumstances since each records center has its own peculiarities and dangers. In the case of fire, the employees should know if and when they should call for help, whether they should attempt to extinguish the fire or should evacuate, and in what order they should do these things. Similar procedures should be established for explosions, earthquakes, power failures, and civil disorders. Expert advice on these matters is available from civil defense agencies, the local police and fire departments, and the organization's safety officer. Once the procedures are established, employees should be instructed and quizzed periodically to make sure they remember the procedures.

Fire department, police department, ambulance service, and other emergency numbers should be clearly posted by all telephones in the records center office and in the stack areas. The

home telephone numbers of records center personnel, particularly the records manager, should be posted prominently and should be made available to night crew personnel in the event of a night emergency.

Post-emergency plans should also be made. Tentative facilities for temporary storage, review, and reorganization of the salvaged records should be designated. A plan for relocating the records to the new facility should be worked out in advance. Valuable records should be designated and locations noted so that they can be given priority treatment. A computer-generated space-number-to-records-title index is helpful in identifying damaged records and in notifying their owners for advice and assistance.

Every detail cannot be worked out in advance because the type or extent of damage will never be known until it occurs. But broad directives will greatly assist recovery, particularly if the records manager is not available for some reason. Such directives can be developed through planning sessions with the records management staff and safety personnel. The "ifs" should include the type of emergency and the various degrees of damage; the "we shoulds" might include specific suggestions for action and possible alternatives.

#### COMPUTERIZATION

Many records managers now use computer technology to assist in managing the inventory of records stored in their records centers. As with any technological tool, the computer should be carefully evaluated on a cost-benefit basis before being used. The first step in the study is to establish and clearly define the objectives of the proposed system.

If the objectives and efficiency levels are identical to those presently achieved with a manual system, the records manager needs only to quantify present clerical effort and compare it to the clerical effort in the proposed computer system. If the proposed clerical effort is equal to

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or greater than the present clerical effort and there are no increased benefits, there is no need to proceed any further: Computerization is not justified. If, on the other hand, the proposed labor cost, plus the costs of data entry, programming, program maintenance, computer time, and hardware, is less than the present comparable cost, computerization is very likely cost-justified. Computerization usually requires a considerable amount of standardization of data to be successful, as it is less forgiving of errors than manual systems are. Of course, even a manual records center system requires standardization and systematizing to operate efficiently. In most situations, computerization is only applied to the records center after the center has been operational for some time and all procedures have been field-tested. Even so, all computer-driven pilot projects should be tested prior to full implementation.

Sometimes, a records manager may want to do tasks with the computer that are not presently being done manually. In this case, the benefits of the proposed task should be clearly defined and evaluated. This evaluation can be a cost comparison or just a simple value judgment.

The following is a list of tasks or objectives that may be handled by a computerized records center system, based on procedures described in this chapter:

- Space-number inventory
- Shelf labels
- Record-title-to-space-number index
- Retention schedule
- Destruction authorization lists
- Space-number-to-transfer-list-number index

- Charge-out and follow-up system
- Available-space inventory
- Projected-space-availability reports
- Reference-analysis statistics
- Automatic space assignment
- Carton label preparation

Most people familiar with the needs and problems of operating a records center would agree that the majority of the listed tasks would benefit from computerization. When costs are calculated for each, the experienced records manager would quickly separate the essential needs from the peripheral. It is not unusual for the least beneficial computer application to be the most costly in terms of computerization and data entry and other conversion costs and, conversely, for as much as 80 percent of the total benefits to be derived from 20 percent of the system capabilities.

However, the proliferation of low-cost, fast, and high-capacity personal computers, modems, and networks makes feasible today applications that were not so, even a few years ago. In addition, many records management consultants and computer software specialists have written and market software packages designed to meet almost all the needs of the records manager. To select the proper commercial system, one must first know what is required of the system. One should select a system that meets those requirements with minimum cost and conversion disturbance.

Additional and more detailed information on using the computer to automate records management systems is furnished in Chapter 9.

## SUMMARY

Efficient operation of the records center requires a well-trained and dedicated staff, the cooperation of the users, and efficient but flexible procedures.

Records are normally transmitted to the records center by means of a transfer list. Only

records authorized by the retention schedule and described on the transfer list should be accessioned into the records center. When the records are placed on the shelves, the space number is recorded on the transfer list adjacent to the

description of the records in the carton. A control-card system, a transfer-list system, or a combination of these is used as an index to the stored records. The latter provides the simplest and least costly method in terms of indexing and retrieval.

All records retrieved from the records center should be charged out to the user, and follow-up controls should be used to ensure the return of records. Disposal of records from the records center must be authorized, and indexing and inventory controls changed when the records are removed.

Space-need projections are made regularly to ensure adequate space. Intracenter transfer of records should be avoided, if possible, because of the indexing changes involved. Moving a records center can be greatly facilitated by creating a space-number conversion table as the records are being moved.

The computer is often used for indexing records center holdings and for providing other inventory and statistical reports. A cost analysis of computer versus manual systems should be made before a computer program is inaugurated. Regular activity reports, made to provide statistical data, are essential for staffing and space planning. Emergency planning is required for the safety of personnel and the protection of records.

#### QUESTIONS FOR DISCUSSION

1. Why is a dedicated and well-trained staff of importance in the operation of a records center?
2. Who are the "customers" of a records center?
3. What responsibility does the records center staff have to the user?
4. Why is it necessary for the staff of a records center to provide its users with the published operating policies and procedures of the records center? How much flexibility can there be in carrying out established policies concerning use of the records kept in the center?
5. Explain the origin and content of the transfer list that accompanies records transferred to the records center.
6. Why is it necessary for the records management office or the records center staff to review the transfer list before records are actually sent to the records center?
7. How are space locations determined for records received by the records center?
8. Identify and distinguish between the indexing methods commonly used by records centers.
9. What factors must be taken into consideration when establishing records center search and charge-out procedures?
10. Why is it necessary to establish a follow-up policy? Explain the various procedures that can be used when follow-ups must be made.
11. Explain the procedural differences between refiling and interfiling.
12. Why and how often should the records center staff make a reference analysis?
13. What are some common arrangements for establishing and maintaining a reference analysis file?
14. How are disposals of records handled by the records center staff?
15. How can future space needs be adequately and accurately projected?
16. Why is it desirable to establish policies and procedures for intracenter transfers of records?
17. What basic clerical operations should be reviewed when determining whether to computerize records center indexing procedures or not?
18. What records center reports can be processed by a computer?
19. What records center activity reports should be made to management on a regular or periodic basis?
20. What plans should be established for con-

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#### PROJECT

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4. Prepare an annotated bibliography of five periodical articles on the topic "Records Center Operations."

### PROJECTS

1. The Houston chapter of the Association of Records Managers and Administrators is sponsoring a two-day seminar, "Improving Records Center Operations." As the program chairperson of the Houston chapter, you are in charge of preparing a tentative 16-hour seminar program featuring a variety of activities—speakers, panel debates, discussion groups, and so on. The Houston chapter anticipates attendance of from 150 to 175 people. A committee will assist you in securing program participants. Your job is to decide on the topics that will be addressed at the seminar.
2. Construct a questionnaire that could be used to gather data concerning all aspects of records center operations. Assume that the questionnaire will be sent to all members of the Association of Records Managers and Administrators.
3. Prepare an outline for a speech entitled "The Disposition of Obsolete Records from a Records Center" that is to be delivered at the regular monthly meeting of the St. Louis chapter of the Association of Records Managers and Administrators.

### CASE PROBLEM

You have just completed your first year as records center supervisor of the Griffen Manufacturing Corporation, which was established 20 years ago. The records center was planned by your immediate superior, the organization's records manager, just before you were employed by the company. The first annual report of the records center's operations must now be prepared for submission to the records manager. Prepare an outline of the report, which shall include cost savings. Use the following data in preparing your report:

Records on Hand: 38,550 cubic feet  
 Accessions: 5,210 cubic feet  
 Disposals: 5,350 cubic feet  
 Reference requests (searches): 15,958  
 Refiles and Interfiles: 29,750  
 Available space at end of year: 2,005 cubic feet  
 Floor space used—stack area: 10,690 Sq. Ft.  
 Floor space—nonstack area: 1500 square feet  
 Cost of floor space (and utilities): \$5.00 square foot (stack area)  
 Cost of office space: \$20.00 square foot (nonstack area)  
 Number of records center clerks: 2  
 Total annual payroll and fringe: \$88,400  
 Cartons and other expenses: \$12,800

## Chapter 19

# Archives Management

### Learning Objectives

1. To define archives management and explain its goals, its objectives, and its relationship to records management.
2. To explain the types and functions of archives.
3. To identify the criteria for appraising the value of archival records.
4. To explain the basic principles for the arrangement of, access to, and use of archival records.
5. To describe the principles of conservation of archival materials to ensure their permanent preservation.
6. To explain the justification for establishing an archives and to explain its operation and use.
7. To explain the various methods of archival automation to facilitate the retrieval of archival records and enhance their use and value.

### INTRODUCTION

Archives management programs are often operated as a part of records management programs, and the records retention schedule is frequently used as the means of identifying records possessing permanent archival or historical value, and scheduling them for transfer to the organization's archive at a point in their life cycle when they have no further value for operational, legal, or other business purposes.

The U.S. National Archives and Records Administration defines *archives* as "the noncurrent records of an organization preserved because of their continuing, or enduring, value," while *per-*

*manent records* are defined as those having "sufficient historical or other value to warrant continued preservation beyond the time they are needed for administrative, legal, or fiscal purposes."<sup>1</sup>

### Goals and Functions of Archives Management Programs

Archives management programs play a very important role in the life of an organization. Unless the organization's archival records are properly

preserved and accessible, the organization's history and culture will ultimately be lost. An understanding of this history and culture is important to a business enterprise and is perhaps even more important to agencies of government, which are legally or otherwise obliged to preserve archival records for their value to posterity in elucidating the history of communities, states, and the entire nation.

Although different types of archival repositories serve different groups and thus may vary in their specific mission and character, all share a common purpose: to acquire, preserve, and make available for use records having permanent business, research, or historical value. More specifically, a formal program for the management of archives usually includes the following six basic functions:

1. *Appraisal*—The process of determining the value and thus the final disposition of records and designating records as either temporary or permanent, which may be accomplished as a part of the process of developing records retention schedules or as a separate act.
2. *Accessioning*—The transfer of the legal and physical custody of archival records from their offices of origin to the archival facility; also the creation of records documenting receipt and acceptance of the records into the archives.
3. *Preservation*—The specific steps undertaken to maintain, repair, restore, or otherwise conserve archival records in appropriate facilities and equipment.
4. *Arrangement and description*—The process of determining an appropriate method of organizing archival records and of developing *finding aids* (indexes or other lists, whether manual or automated) to describe the records and to facilitate their retrieval and use.
5. *Access and use*—The implementation of policies and procedures governing the access and use

of archival records by employees of the organization which owns them or by the general public.

6. *Reference and staff services*—The provision of facilities and a staff of *archivists* having professional training in archival administration to assist researchers or other persons in the use of archival records. In some particularly proactive archival programs, these services may include outreach activities to market the use of the program to persons or professional groups throughout the community, the state, or the entire nation.

Each of these six basic functions of an archives management program will be discussed in greater detail later in this chapter.<sup>2</sup>

### Relationship Between Archives and Records Management

The relationship between archives and records management has been the subject of much discussion and debate in professional circles for many years.<sup>3</sup> The records management field evolved from the archival profession during the 1950s and in subsequent years achieved a separate professional identity with its own community of vendors, educational courses of study, professional association, and certifying body. Nevertheless, the two professions still share much in common, and records managers need a good understanding of archival principles and practices in order to develop a comprehensive records management program. We shall begin this discussion with some observations concerning the similarities and differences between archives and records management principles and practices.

1. *Primary objectives*. Archivists are primarily concerned with the permanent preservation of historically valuable records in order to serve the ends of researchers or other users of original

source materials. The principal objectives of records managers are more directly related to the core objectives of their organization's business: improving administrative efficiencies, reducing costs, and improving the productivity of information users.

**2. Media management.** Archives management and records management are both concerned with managing the same types of record media: information in all forms and formats. Archivists, however, usually begin their hands-on management of these media at the last stage of their life cycle — after they have been judged worthy of archival preservation and are transferred to the archival repository. Records managers, on the other hand, are concerned with the management of all record media from the earliest phases of their life cycle.

**3. Condition and value of records.** Archivists and records managers share a common interest in the quality of recordkeeping systems and the value of the information they contain. Records managers work to improve the quality of both active and inactive recordkeeping systems, while archivists have a strong interest in receiving archival records in good order when they are accessioned into the archives. Moreover, the interests of both groups directly intersect during the records appraisal process, when decisions are made about which records series possess archival value and thus will be transferred to the archives.

**4. Indexing and retrieval systems and techniques.** The systems and techniques used to organize, index, and retrieve common office records are quite similar to those used for collections of archival material. The major differences are that most archival records will not be retrieved and used nearly as frequently as active office records or even as frequently as most inactive records stored in a records center. Both archival and nonarchival records require indexing capabilities that support *precise* retrieval, but archival retrieval does not usually need to be as rapid or *timely*.

The records manager is responsible for managing the "archives of the future." Hence, the records manager must understand the functions and basic techniques of the archivist so that he or she can recognize and preserve archival material in usable form.

### The Archivist

The professional archivist usually has a background in history and social or library science. (As used here, the term *professional* means that the archivist has completed academic work and has experience in the management of archives and the appraisal of archival material.) A business archivist's background may be in history, economics, or business administration. It is not unusual for an archivist to hold advanced degrees and to have had specialized training in archival theory and techniques. An archivist may also pass examinations and become a Certified Archivist, as designated by the Institute of Certified Archivists.

The Society of American Archivists is the professional association through which archivists exchange information about developments and techniques. This organization has contributed significantly to the progress being made in standardizing terminology, methods, and techniques, and in improved training programs. It has provided the incentive to research and to publish information about technical developments in the preservation and use of records. The society's flagship publication is the *American Archivist*, but it also publishes a variety of books and other types of archival reference materials.

### TYPES AND FUNCTIONS OF ARCHIVES

Archival repositories (or *depositories*, as they are sometimes called) are of three general types: public archives, private archives, and manuscript repositories.

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### Public Archives

Federal, state, and local governments create many records in the ordinary course of business. Some of these records are of the average business variety and are treated like any other business record. Other records that have served their primary purpose have permanent value and are retained in the archives. These records document the history of the government, its agencies, and the citizens it serves. Among the many types of records maintained in public archives are census records, tax assessments, land records, and mortgages. Some of these records are maintained for administrative and legal as well as historical purposes.

### Private Archives

Private archives are established to preserve the history of an institution, a corporation, or a family. Many churches, businesses, and associations maintain a private archive to provide evidence and information of their organization's functions, policies, procedures, and operations. This chapter is concerned, for the most part, with private business archives.

### Manuscript Repositories

In addition to their own private archives, many universities maintain archives of other records. These manuscript repositories often contain collections of unpublished manuscripts or records of a particular activity or function not related to the university. For example, Wayne State University in Michigan maintains the archives of labor history and urban affairs. In its collection are the records of several labor organizations, including the United Auto Workers. There are also personal papers of individuals associated with the labor movement and with urban affairs.

The difference between a private archives and a manuscript collection is that, in the case of the former, the scope of the holdings is limited to an

organization and its affiliates, whereas the latter is devoted to the records of an outside organization or individual that has a common function or was involved in a common activity.

### BASIC ARCHIVAL TECHNIQUES

Basic archival techniques include records appraisal, archival arrangement, preparation of finding aids, and development of policies governing access and use.

#### Archival Appraisal

Archivists, like records managers, do not want to preserve useless records. They are selective in choosing material for permanent retention in the archives, and the material they choose must serve the purpose for which the archives was created. This selection process, referred to as *archival appraisal*, is the process of determining the value and thus the disposition of records based upon their current or future administrative, legal, and fiscal value; their evidential and informational research value; or their relationship to other records.

The archival appraisal of records is perhaps the most difficult and important task any archivist must accomplish. This task determines what will be preserved for posterity and what will be discarded. These decisions must be made on the basis of predictive judgments relative to the probable future use and value of record material. These judgments are irrevocable: Once destroyed, archival records cannot be re-created; they are gone forever.

A detailed discussion of administrative, legal, and fiscal values of records appears in Chapter 3. However, the archival appraisal process must also consider other characteristics of records: their evidential and informational values.

**Evidential Value.** Records have evidential value when they document how an organization came into being, how it developed, how it was organized, what its function has been, and the results

of its activities. Thus, archivists must be concerned with the relative importance of each department or agency within the organization, the function it performs, and the activities it is engaged in.

The amount of documentation generated by any office or department depends upon the relative importance of the organizational unit. Offices that make policy or important decisions will usually produce more documentation of archival value because their functions are more significant than those of other offices or operational units.

The activities of an organization are of two types: substantive and facilitative. *Substantive* activities contribute directly to the functions of the organization. For example, if the function of an organization is to produce automobile electronic parts, engineering activities would be substantive. Substantive activities usually produce at least some documentation that would be appraised as possessing archival value. *Facilitative* activities, on the other hand, contribute indirectly to the function of an organization and are common to many organizations having different functions. For example, an in-plant printing department, while very necessary, is a supportive operation and does not contribute directly to the mission of the parent organization. Because this type of activity is not unique, it may be expected to produce very little in the way of archival documentation.

In documenting both the substantive and facilitative activities of an organization, it is necessary to consider the transactions that constitute those activities. Transactions are of two types: policy making and operational. Policy-making transactions will usually generate more documentation of archival value than will operational transactions because they have a greater overall effect on the organization and because operational transactions are generally routine in nature.

**Informational Value.** While records with evidential value document the life span of an organization, records with *informational value* simply, as the name implies, provide information. Informational value is often called research value. Be-

cause the value of a record is intrinsic, the record should be evaluated on its own merits. An appraisal of records with informational value requires a knowledge of research needs and methods. It also requires a knowledge of the discipline to which the records pertain. If the archive contains documents covering a wide scope of interests, professional assistance will be needed because archivists cannot be expected to be knowledgeable in all fields. But if the records are retained primarily for historical research or if their scope is narrow, most archivists, by virtue of their training, can do the appraisal without outside assistance.

There are no absolute standards by which informational value appraisals can be made. In appraising records, archivists normally use their own professional judgment. However, what one archivist may consider important, another may consider worthless. T.R. Schellenberg, perhaps this century's leading archival theorist, said regarding this diversity of judgment: "Diverse judgments, in a word, may well assure a more adequate social documentation."<sup>4</sup> Still, there are some standards upon which the judgment can be made. For example, age alone can be a factor in appraising records for historical use. Records 100 years or older are usually retained regardless of content. Also, the uniqueness of the information is a factor considered in appraisal process. Regardless of the particular approach to appraisal decision making that the archivist may employ, it is critically important that the archivist preserve documentation showing the appraisal criteria utilized and the reasons or justification for the preservation or disposal decisions that are made.

Records pertaining to a noted or historical person usually have informational value, especially if the individual originated the records. Records pertaining to significant historical events, such as wars, disasters, and political innovations, will frequently have historical or research value.

Business archives normally consist of papers of company presidents and other policy-making

officers and give the reasons for having informational value.

### Appraisal Guidelines

The records appraiser should consider the following attributes:

1. The record is of historical significance.
2. The record is of legal value.
3. The record is of administrative value.
4. The record is of scientific value.
5. The record is of cultural value.
6. The record is of educational value.
7. The record is of informational value.
8. The record is of sentimental value.

The National Archives and Records Administration maintains records of both the federal government and the states. The rights of individuals to information are protected by state government records laws. Vital statistics, public utilities are preserved by community and state, sociological and historical. Archivists come into their own when they are able to identify and preserve records of historical value.

officers and generally offer valuable insight into the reasons for corporate actions. These records have informational value.

### Appraisal Guidelines

The records appraised as possessing archival value and accepted for permanent retention in the archives should have at least some of the following attributes:

1. The records document the creation and organization of the company or its subsidiaries.
2. The records document or provide evidence of the company's activities and the consequences of those activities.
3. The records are noncurrent, that is to say, all references pertaining to the subject activities have ceased.
4. The records provide information relative to significant technical questions regarding the company's operations.
5. The records meet possible scholarly needs for the information that is incidentally or accidentally contained in them.
6. The records contains marginally written notes of significance by company officials.
7. The records contain original signatures of officers of the company or other prominent persons.
8. The records have continuing legal or operational value to the company.

The National Archives and Records Administration maintains vast quantities of personnel records of both military and civilian personnel of the federal government, chiefly to substantiate the rights of individuals or their heirs, should such information be needed. In the case of local and state government archives, records pertaining to vital statistics, property rights, and corporate activities are preserved for the benefit of the local community and also for use by researchers for, say, sociological studies.

Archivists cannot retain all material that comes into their possession. They must be selec-

tive and preserve only the material that has evidential or informational value. In many instances, it would be sufficient to retain only a sample of the series rather than the whole series. Further, in some instances an overabundance of records only serves to make the entire collection more difficult to use effectively. In cases where the sheer volume is a problem, the originals can be micro-filmed and then, if they have no value, they can be discarded. In these cases, it is the information that is valuable, not the documents themselves.

### ARRANGEMENT OF ARCHIVAL RECORDS

An archives exists to be used. Efficient use of an archives requires that the records be arranged according to the principles of provenance and original order. In addition, storage techniques, locating systems, and finding aids must be developed so that the records can be easily retrieved when needed.

#### Levels of Arrangement

*Archival arrangement* is the process of organizing archives, records, and manuscripts in accordance with accepted archival principles. These principles serve as guidelines for indicating the best method of physically arranging archival records into logical groupings. Normally, archival records are organized into one or several levels in a hierarchical fashion, from broad to more specific groups or categories, so that the information can be retrieved efficiently. The following levels of archival arrangement are commonly recognized and used.

1. *Record group level.* This highest level of archival arrangement usually refers to the records of an entire institution, agency, or company. Sometimes referred to as a *fond*, particularly in European archival practice.
2. *Subgroup level.* A body of related records

within a record group, usually consisting of the records of a primary subordinate unit of a major organization, such as a subsidiary company. A division, or other primary subordinate unit, a subgroup of archival records may, in turn, be divided into as many groupings as are necessary to reflect the successive organizational units of the organization's hierarchy.

3. *Collection level.* In archival practice, this term is similar in meaning to the terms *record group* and *subgroup*, although it is most often used in reference to the private papers created by individuals or families rather than those of organizations and institutions. The term *collection* also refers to artificial accumulations of manuscripts assembled by a person, organization, or archival repository and devoted to a single theme, event, or type of record. In the plural, *collections* refers to the total holdings—accessions and deposits—of an archival repository.

4. *Records series level.* As defined in Chapter 2 and applied here, the records series consists of separate file units of documents arranged in accordance with a filing system established by the office which created the records. The records in the series are maintained as a unit because they relate to a particular subject or function, result from the same activity, or have a particular form, or because of some other relationship arising out of their creation or use.

5. *File unit level.* A group of related documents or other items of information usually maintained in file folders organized in some logical sequence within a records series is a file unit.

6. *Document or item level.* The smallest unit of record material which accumulates to form file units within a records series, the document or item usually consists of a single record, letter, memorandum, report, form, or manuscript sheet.

This hierarchical concept of archival arrangement and the various levels that constitute the hierarchy are the basis for the manner in which

archival records are organized. However, to complete our understanding of archival arrangement, it is necessary to explain two other basic concepts—provenance and original order.

### Provenance and Original Order

*Provenance* means that archival records should be maintained in an archival repository in groups that correspond to their source of creation. Therefore, records that are received from an agency or a department should remain as a distinctive group and should not be intermingled with those of other offices or arbitrarily rearranged under other groups. The reasons for this principle are as follows.

1. The records provide better evidence of the activities of an organization when they remain intact.
2. The records of one organization constitute an integrated whole. If the records are arranged in another order, such as by subject, research becomes more difficult, if not impossible.
3. Records arranged by unit of organization make description and location easier.

The principle of *original order* is nearly synonymous with that of provenance. It means that the records are left in the order that existed when they were in current use, provided there is enough semblance of order to assure easy retrieval. Rearranging records in good order would be time-consuming and probably fruitless because the new arrangement would serve an undefined need. If the records are entirely without order, however, a simple plan of arrangement should be devised. Because archival records are created in the normal routines of an office, the best way to preserve them is to retain their original order. The original order of the records can often tell the researcher the importance of the records, the importance inherent in certain topics, and the intrinsic value of the records.

The principles of provenance and original or-

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### Indexing and

Archival indexes consist of creating an index, list, or the archival use. Finding aids published in a repository to control over the finding aids lists, descriptions

1. *Archival index.* An archival index aid, an index, list, or the archival use. Finding aids published in a repository to control over the finding aids lists, descriptions of the significance of the records are listed of each record subgroup. The detailed descriptions, dates, quantities, relationships of the significance of the records.
2. *Register.* An archival index aid, an index, list, or the archival use. Finding aids published in a repository to control over the finding aids lists, descriptions of the significance of the records.
3. *Guide.* An archival index aid, an index, list, or the archival use. Finding aids published in a repository to control over the finding aids lists, descriptions of the significance of the records.

der apply most often to records that have evidential value. Records that are retained for informational value are usually arranged by subject or other category that will assist the researcher.

### Indexing and Retrieval Techniques

Archival indexing and retrieval techniques consist of creating various types of *finding aids* to index, list, or otherwise describe the holdings of the archival repository in order to facilitate their use. Finding aids consist of descriptive media—published and unpublished—created by the repository to establish physical and intellectual control over the records. Common types of archival finding aids include inventories, guides, and registers, described as follows:

1. *Archival inventory.* The basic archival finding aid, an inventory generally includes a brief history of the organization or person whose records are being described and a descriptive list of each records series within the record group or subgroup. The inventory may also include such detailed descriptive data as file titles, inclusive dates, quantity, arrangement of each records series, relationship to other series, and a description of the significant subject content of the records.
2. *Register.* Similar to the inventory, the register is an archival finding aid which was developed by the Manuscript Division of the Library of Congress to describe groups of manuscripts, collections, and records by indicating their provenance, scope, and content, including inclusive dates, biographical notes about the person, family, or organization reflected in the records; their arrangement; and other descriptive data. Sometimes registers are general in nature; other times their coverage is detailed to include a list of events, letters sent and received, and so forth.
3. *Guide.* This archival finding aid is a more

general description of the holdings of an archival repository; it usually describes and indicates relationships between holdings, with record groups, papers, collections, or comparable bodies of materials as the units of entry.

Other common types of archival finding aids include shelf lists, catalogs, index cards, accession folders, and various types of record indexes and listings. Technologies and systems for automating these basic, manual archival finding aids are discussed later in this chapter.

The archivist must make very important decisions relative to the level of detail that should be employed in preparing finding aids to describe each record group, subgroup, or collection. These decisions are so important because the process of preparing finding aids is usually very time-consuming and thus expensive. Finding aids can be prepared to any level in the hierarchy of records: from a general narrative description of the records of an entire record group or collection to a detailed description of each individual document or item in the collection. Decisions concerning the depth of finding aid descriptions are usually made on the basis of factors such as the size and value of the collection, its probable future use, and the resources available to prepare the finding aids. Of course, very detailed finding aids will certainly facilitate the use of a collection, but item-level descriptions are not always essential (indeed, they are seldom justified), especially for very voluminous collections.

In addition to finding aids, archival storage and retrieval systems include shelf-numbering systems and box or container labeling and numbering techniques. Many of these systems share certain common features with the numbering systems used in records centers.

Typically, archival storage cartons are labeled with, at least, the record group name, records series, and other levels in the hierarchy of arrangement, and the box number. Also, the description on the finding aid will show the address of the container. Finally, the finding aids are usually filed

by record group, such as the department agency or number.

The following plan is illustrative of a common scheme for arranging various types of archival material in an archival repository:

1. Corporate and financial records
  - By name and company
  - By name of record
  - By date
2. Biographical records
  - By name of individual
  - By date
3. Biographical photos
  - By name
  - By title
  - By date
4. Facility photos
  - By location
  - By name
  - By date
5. Maps and prints
  - By company
  - By type
  - By date
6. Movies and film clips
  - By title
  - By subject
  - By date
7. Publications
  - By title
  - By date
8. Organizational records
  - By name of organization
  - By date
9. Administrative and operational records
  - By type of technology or discipline
10. Equipment and product data
  - By type of equipment
  - By date
11. Advertisements and marketing
  - By product name
  - By date
12. Sampling of selected records
  - By name of record
  - By date

### Storage Techniques

Archival records are usually maintained on stationary or movable steel shelves, using acid-free (not under a pH of 5.6) containers that are usually constructed of 40- to 60-pound pressboard. The type of carton used in an archives is quite different from that used in a records center. The archives container is of either the horizontal or vertical variety (see Figure 19.1). That is, the records are either laid flat or placed on end. These containers are designed with hinged lids that protect the records from dust and help to reduce moisture or fire damage, and they are usually much smaller than standard records center cartons.

### Access Restrictions

Every archive should have a statement of policy that establishes general rules for access to the records. This protects the records from damage and prevents pilferage and disruption; also, the owners or creators of the records have certain rights of privacy, which must be respected. Sometimes the depositor may impose additional restrictions on use. It is extremely important that the archivist respect and enforce these restrictions with the highest professional ethics because a breach of trust would destroy the confidence of future depositors and possibly do great harm.

### Conservation of Archives

The preservation of records from deterioration is not an exclusive function of the archivist. But because archival records always demand the greatest possible care to prevent their deterioration, this subject is worth discussing.

**Nature of Paper.** The longevity of a paper document depends upon the quality of the paper. Paper consists primarily of cellulose fibers which are held together by sizing agents such as glue, rosin, and starch. The two types of fibers commonly used in the manufacture of paper are rags and wood. Of these, rag provides the highest-quality

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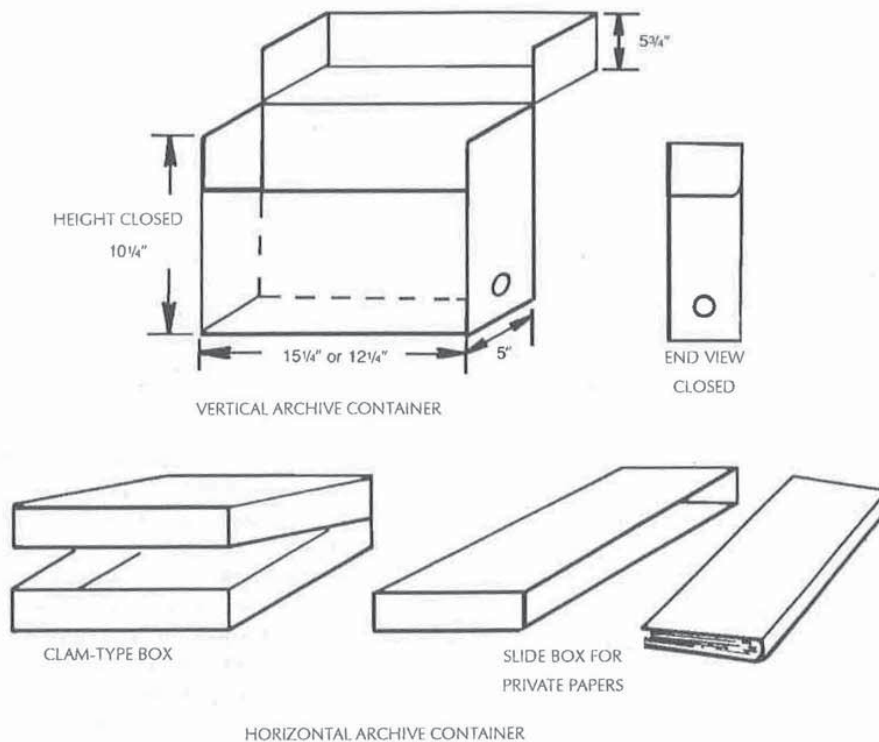


FIGURE 19.1 Archive Containers

paper; however, the amount of acid material or rosin used in the process decreases its permanency.

**Nature of Writing Medium.** India inks, type-writer inks, and printing inks are considered permanent and will not fade over the years. Iron gallotannate inks are the black and blue-black record inks used today; they have relative permanence. Pencil graphite and carbon paper are permanent unless erased or smudged. However, so-called washable inks and the modern-day dye inks, which are available in many colors, do not have the permanence of the iron gallotannate inks and will completely fade in time. Nutgall ink, which

was used on many old records after 1830, was a forerunner of the present-day iron gallotannate inks and exhibits many of its properties. Nutgall ink fades with time but leaves an iron-salt residue that can be read with ultraviolet light or when photographed with infrared techniques, even though it is not legible to the naked eye.

**Environmental Dangers.** The deterioration of paper records can be caused by many factors other than physical abuse. Both natural sunlight and artificial light high in ultraviolet rays will cause low-grade paper to yellow and become brittle and high-grade paper to bleach and become brittle. Yellowing and brittleness are also caused by ex-

posure to high temperatures, even for a short period of time.

For the best preservation of all types of paper, temperatures should be kept at a constant 65°F to 70°F. Humidity should remain at about 50 percent because readings below 30 percent can cause drying and brittleness, while readings above 75 percent can cause molding, discoloration, and weakening of the paper. Air conditioning, with proper air filtration, is the best protection against deterioration from fungi, acid, and other agents harmful to paper.

Insects and rodents are also a source of danger to paper because many varieties will eat the paper. Fumigation and pest-control devices should be used to deal with this type of danger. Some archives have fumigation tanks, which they regularly use when accessioning new material to prevent infestation and spread of the vermin.

**Handling of Archival Records.** Unless records are given reasonable care when handled and stored, they can be damaged. Large volumes should be laid flat on the shelves, but smaller volumes can be set on end properly braced with book-end-type equipment. Cartons should have covers to protect the records from dust and moisture. The records should not be packed so tightly in the carton that they are damaged when inserted or removed, nor so loosely that they fold or bend. Loose documents should be placed unfolded in an envelope before being placed in a carton. Folded documents should be flattened and placed in acid-free folders. Rubber bands should not be used and should be removed because the rubber deteriorates and adheres to the paper. Twine is recommended as a substitute. Paper clips will rust with time and mar the surface of the paper; they should be removed before storage. Plastic paper clips can be used if it is absolutely necessary to clip documents together.

**Lamination, Encapsulation, and Microfilming.** Because archival repositories often contain large

quantities of old records in a deteriorating condition, archivists are confronted with the problem of how to prevent further deterioration and provide for the permanent preservation of valuable documents. Three methods are commonly used: lamination, encapsulation, and microfilming.<sup>5</sup>

**Lamination** involves using a chemical process to deacidify documents by soaking them in chemical solutions to neutralize the acid content of the paper. Then, the document is sealed between two sheets of plastic. This document conservation technique originated in the National Archives during the 1930s, was later refined by William J. Barrow, a professional manuscript conservator, and was for many years widely used in archival repositories. However, the technique is seldom practiced today because it is expensive and it irreversibly alters the original state of the documents.

**Encapsulation** is a document conservation technique developed by the Library of Congress. The process involves encapsulating a document in a sandwich of two sheets of polyester film. Encapsulation is generally less expensive than microfilm and preserves the documents in their original condition.

**Microfilming** is frequently used to capture a photographic image of archival records on a permanent photographic medium. In addition to its value as a preservation and conservation medium, microfilm has several other significant advantages to the archival repository: savings in space, enhancements in the accessibility of the document, better security, and ease of distribution. Microfilm requires a fraction of the space needed to store paper records. If the microfilms are well indexed, the retrieval of archival records can be significantly enhanced, and duplicate copies of the microfilms can easily be made and distributed to other repositories or to an offsite location for security purposes. Archivists who wish to use microfilm as a document preservation medium must, however, take care to produce and store the film so that it retains its properties of archival permanence.

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## ESTABLISHING AND OPERATING THE ARCHIVES

Most of the principles and methods of maintaining an archives discussed earlier in this chapter can be applied to a business archives. The records manager will often require the assistance of an archivist in making appraisals. Assuming that the program would be operated as an adjunct of the records management office rather than as a separate entity, the archives will often be located in the records center. A specific and suitable section of the records center should be allocated to archival material. The space-numbering system and control systems can be the same as for the records center. However, an additional index and set of finding aids should be established as though the archives was a separate facility. The index should be in addition to the regular index, because some of the records in the archives section may still have business value.

If some archival material is to be retained in offices, such as public relations or engineering offices, notations of the location of this material should also be included in the finding aids so that the researcher will have one central source to retrieve the records. Although it is desirable that all archival material be retained in the archives, this may not always be the practice.

Although there is nothing to prevent the records manager from simply setting aside archival material and following archival practices, it is best to have formal recognition of an archival program from top-level management. This recognition is absolutely essential if the program is to be funded separately and is beneficial if the archives is to be used fully.

When the program is established, a statement of policy and procedures should be drawn up and approved by top management. First, the policy should outline the scope of the archives, thereby limiting the material accessioned to those records that serve the needs of the company and the purpose of the archives. Second, it must prescribe access policies and the authority of the archivist.

This statement must be tailored to the organization, recognizing the practices and needs peculiar to the company. Figure 19.2 shows a sample statement of policy and procedures for a company archives.

## BUSINESS ARCHIVES

There are two types of business archives.<sup>6</sup> The first consists of records maintained as part of a research collection of a university; the second is a private archives, maintained by a company to provide historical documentation of its organization and activities. This section deals primarily with the latter type, but the factors involved in appraisal may be identical in both cases.

Because a primary function of any business is to make a reasonable profit for its owners, it is often difficult to justify expenditures for nonprofit activities such as the establishment of a formal archives, particularly because a full- or part-time archivist would have to be employed. For this reason the function of the archivist is often performed by the records manager. Some organizations have recognized the public relations, research, and legal values of a well-managed archives and have employed a full-time, professional archivist to perform this activity. Whether the archivist performs the added duties of a records manager or the records manager performs the added duties of an archivist depends for the most part on the emphasis desired by the organization.

## The Value of Business Archives

Though company officials may not recognize it, a certain amount of archival material is preserved through the records retention schedule. This material can include the records that have been assigned a permanent retention period, such as the minutes of board and stockholder meetings, general ledgers and journals, articles of incorporation, annual reports to stockholders and regulatory agencies, records of capital investment, au-

STATEMENT OF POLICY AND PROCEDURES  
THE ARCHIVES  
OF  
XYZ COMPANY, INC.

1. *General Purpose:* The purpose of the archives of the XYZ Company is to preserve the documented history of the company, its subsidiaries, and predecessor companies for the benefit of advertising, public relations, the scholar, and posterity, as well as for operational use.
2. *Funding:* The archives program is to be funded separately and is under the jurisdiction of the archivist.
3. *Location of Archives:* Archival records may, depending on the rate of reference, the need for special security, or other factors, be housed in any one of the following three locations:
  - a. Archives room of the records center
  - b. Private vault
  - c. Public relations office
4. *Scope of Collection:* The collection will include items such as the following.
  - a. Corporate and financial records
    - (1) Minute books and charters
    - (2) Annual reports
    - (3) General ledgers and journals
    - (4) Records of significant litigation and legislation
    - (5) Records of mergers and acquisitions
    - (6) Records of bankruptcy proceedings
  - b. Biographical records
    - (1) Papers of former company presidents
    - (2) Papers of any policy-making officer
    - (3) Oral history tape recordings
  - c. Photographic and cartographic records
    - (1) Still and movie photographic material
    - (2) Maps and plans
  - d. Publications
    - (1) House organs
    - (2) Histories
    - (3) Others (selective basis)
  - e. Organizational records (selected)
    - (1) Professional and trade associations
    - (2) Employee organizations
    - (3) Regulatory agencies
  - f. Administrative and operational records
    - (1) Computers
    - (2) Management information systems
    - (3) Major improvements

FIGURE 19.2 Statement of Policy and Procedures for a Company Archives

FIGURE 19.2

thority to issue franchises, and records are pre- ing, or fiscal p research. They but eventually the best evi- der and activities.

When a cor- porate identi- records cease to archival value re

- g. Product and equipment data
  - h. Samplings of other significant records and document-type memorabilia
5. *Access and Restriction Policies:*
- a. Access to any archives, manuscripts, or private papers will not be allowed until twenty-five (25) years have elapsed, without special approval of the president, vice-president(s), secretary, treasurer, director of public relations, or the archivist.
  - b. Certain records or papers, designated as restricted, will not be available for access, even though twenty-five (25) years have elapsed, without express approval of the officers named in paragraph 5a.
  - c. Special considerations will be given by the officers (named in 5a above) when the researcher is especially qualified to examine these records or when the best interest of the company demands it. To be properly qualified, the nonemployee researcher shall:
    - (1) Be a college or university professor and supply a statement of research objectives.
    - (2) Be a student in good standing at a college or university and submit proper attestation of qualification by his or her instructor.
    - (3) Be a nonacademic researcher and supply a statement of objectives and references.
  - d. The director of public relations will have access at any time, and other company employees may research those archival records that still have operational value when they are properly authorized.
  - e. Photographic reproductions may be made only with the express approval of the director of public relations or the archivist, and the researcher is not authorized to deposit these reproductions with another organization or person without permission.
6. *Accessions and Appraisal:*
- a. Accessions—Accessions will normally be from the following sources.
    - (1) Records center transfers and disposals
    - (2) Persons or officers within the company
    - (3) Persons outside the company
  - b. Appraisals—All records will be appraised by the archivist, upon receipt or transfer to the records center and before destructions are authorized, to determine suitability for retention. Regardless of sources, accessions will be limited to the scope of the collection.

FIGURE 19.2 Continued

thority to issue stocks and other securities, deeds, franchises, and many engineering records. These records are preserved principally for legal, operating, or fiscal purposes and for possible scholarly research. They may not be archival when created, but eventually they will be, because they provide the best evidence of an organization's function and activities.

When a corporation is dissolved and loses its corporate identity through a merger, many of these records cease to have business value, but their archival value remains. Such records may include

correspondence files of corporate executives; photographs of facilities, products, or equipment; records of corporate involvement in community affairs; records of employees and pay schedules; noteworthy litigation; or marketing plans and product development. The preservation of such archival materials by a business may be based on a sense of responsibility to posterity or on a desire to encourage business history and research. There is a very fine line between appraising records for retention scheduling purposes and appraising for archival purposes; many highly respected records

managers, who serve dual roles, maintain that there is no significant difference.

George David Smith and Laurence E. Steadman<sup>7</sup> have pointed out the practical value of a corporate archives:

*A history of the company is an important though generally unexploited corporate resource. It has many values extending well beyond the celebratory function of the conventional "company history," in either its publicity brochure or anniversary-book form. . . . Once managers recognize the value of the corporate past, they can enhance their ability to diagnose problems, reassess policy, measure performance, and even direct change.*

All of these benefits that accrue from an appreciation of an organization's history ultimately can translate into better management and increased profits.

Convincing management to invest a small portion of its resources in a formal archival program is not an easy task, but a visionary management that appreciates the Smith-Steadman concept of business archives would very likely direct that the program be implemented. The first such visionary was Harvey S. Firestone, Jr., in 1943. Since then, many companies in the United States have established archives. Even so, the number represents only a small percentage of corporations that have recognized the value of business archives. The litigious environment in which corporations operate today makes the selling job more difficult because many executives believe that the information in the archives could be more harmful than helpful to the company in the event of litigation.

Records managers should remember that even in the most receptive business environment, the development and continued existence of corporate archives will depend on a program justification based on costs, benefits, and risks. Such a justification should be based on the uses to which the corporate archives can be put in the ongoing life and operations of the firm. It will usually not be enough to justify the existence of the archives

based on the intrinsic historical value of old records.<sup>8</sup>

## ARCHIVAL AUTOMATION

Archivists have been engaged in efforts to automate the finding aids of the holdings in their repositories since the early days of electronic computing.<sup>9</sup> Basically, these efforts have focused in three areas:

1. The development of national standards for archival automation so that the finding aid data of individual repositories can be electronically shared with other archival repositories throughout the country.
2. The automation of the finding aids of individual archival repositories, so as to facilitate access and use of the holdings.
3. The preservation and use of electronic archives—records of historical value which reside on various types of computer-processable storage media.

### National Standards for Archival Automation

During the mid-1960s, the Society of American Archivists established the Committee on Automated Techniques for Archival Agencies. During the same period, the National Archives initiated its first major automation project called Spindex II, a continuation of an earlier project sponsored by the Library of Congress. Both of these efforts were concerned with creating a computer system that could be used by archival repositories throughout the country. This required the standardization of finding aid structures, terms, data fields, and other format elements used to describe collections of records. This was a difficult undertaking since archival repositories maintain unique collections that are described in various levels and

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depths and that utilize finding aids of widely diverse types and formats. Nevertheless, these efforts continue even today; their ultimate objective is to establish uniform format standards for finding aids that can be used with any computer and its software programs, and permit the electronic exchange of finding aid data between repositories.

More recent efforts at developing national standards for archival automation resulted in the RLIN and MARC-AMC projects. The RLIN (Research Library Information Network) is a service of the Research Library Group, which operates an on-line catalog for rare books and other research materials. Archivists and manuscript curators realized that this on-line service could be utilized as a national database for archival holdings, so they began to contribute descriptions of their holdings to it.

Another effort at establishing a national database of archival holdings was co-sponsored by the Library of Congress, the Committee on Archival Information Exchange of the Society of American Archivists, and a similar group within the American Library Association. These organizations developed the machine readable cataloging format for archival and manuscript control—MARC-AMC. Once data from finding aids is entered into this database, it can be transmitted electronically to national networks such as RLIN, OCLC, and others.<sup>10</sup> These systems greatly enhance researchers' ability to determine whether remote archival institutions contain holdings that are relevant to their research interests.

#### Automation of Finding Aids for Internal Repository Use

Just as librarians were eager to use computers to automate their card catalogs, archivists were also eager to use these machines to automate their finding aids. From the earliest days of computing, it was obvious that computer automation of find-

ing aids could offer greatly enhanced search capabilities to the use of archival materials. Paper-based finding aids are frequently bulky and cumbersome to use, and they have very limited cross-referencing capabilities to enable the researcher to locate relevant information which may exist in many record groups or collections, or in many records series of a large record group or collection. With the ability to perform keyword searches in all data fields, computerized finding aids can greatly facilitate the use of the holdings of virtually any archival repository.

#### Mainframe-Based Systems

Prior to the advent of microcomputers, the first efforts to automate archival finding aids utilized mainframe computers. Since they are usually located within universities, government agencies, or large businesses, most archival repositories have access to mainframe-based computing resources.

A well-known example of an early mainframe-based archival automation system uses the Paradigm system installed at the University Archives of the University of Illinois at Urbana-Champaign. As originally designed, this system contained the automated finding aids of the approximately 2,700 collections in the archives, of which over 400 were private manuscripts (personal papers of faculty members). For each collection, the following data were entered into the university's mainframe computer: collection name, accession number, inclusive dates, dates of accessioning, type and quantity of documents, access restrictions, several name and subject descriptors indicating the nature of the collection, and shelf location data. It should be noted that this level of finding aid automation is relatively general; as originally configured, the Paradigm system did not include file folder or item and document level data.<sup>11</sup>

Although this mainframe-based approach to

archival automation has its advantages, it suffers from many of the disadvantages of many main-frame computing applications: custom programming is required to produce the software to run the applications, long lead times are usually required to develop the applications, and the archival repository is dependent on the computer department's staff for all system development and support functions. This situation began to change during the 1980s with the advent of the micro-computer, the development of the DOS operating system and database management technology, and the creation of thousands of applications software programs to run on these small computers, including some programs specially designed to automate the finding aids of archival repositories.

### PC-Based Software for Archival Automation

Beginning in the mid-1980s, archival automation software products were developed for operation on microcomputers. During the ensuing years, the prices of both the PC hardware and the archival automation software have become much more favorable, to the extent that the tools for archival automation are affordable for virtually any repository. This software is easy to install and use, and it provides a convenient method of computerizing many basic types of archival finding aids in most small to medium-size and some larger repositories.

Archivists who want to install this type of computer system should define their requirements carefully, evaluate a number of competing products, and select the product that comes closest to satisfying their requirements. The best products have a substantial base of successful installations, provide flexibility for customization, have powerful data retrieval capabilities, and are sold by reputable software companies which can provide good after-the-sale product support. Chapter 9 contains a more detailed discussion concerning evaluating software products.

### Electronic Archives

Businesses and government organizations have been creating significant quantities of records in electronic (machine-readable) format for many years, and some of these records possess archival value. The archivist is therefore faced with the responsibility of how to preserve and manage these electronic archival materials.

The following are some guidelines which should prove helpful to both records managers and archivists in planning and implementing policies and programs for machine-readable archives:

1. *Computer media containing machine-readable records are generally not considered to possess qualities of archival permanence in the same sense as paper and microfilm media.* As noted in Chapter 8, if an organization wishes to retain computer records for many years and be assured of being able to read them, it must usually rely on paper or microfilm output to meet its archival needs. High-quality paper records and archival microfilm can be expected to have a readable life span of several hundred years if these media are stored properly, but the guaranteed readability of computer media is much more problematic. Even if the data on the computer media retain their integrity for, say, a hundred years, the archival repository must maintain the proper hardware and software to read the records. Such maintenance is very problematic because these system components have a relatively short service life. Many organizations address these problems by preserving the electronic records in ASCII format, which provides the best and most flexible option for processing the records on a variety of computer platforms.

2. *Unless computer-based archival records need to remain in a computer-processable format in order to support ongoing research requirements, it may be difficult to justify the cost of preserving them in this format.* Most historical research is accomplished using static rather than dynamic

data. One would processable records might include and space

3. *Electronically transferred records which are not archival film (COM) archival records properly preserve an excellent archival cycle of the records remain in a require archival*

### SUMMARY

Archives are an organization continuing, or one that never loses its present preservation programs archival record programs. The more archivists frequently play a role in selecting the organization's the facility itself

Archives number of basic important are appropriate or conservation reference service

data. Only very specialized computer databases would need to be preserved in computer-processable format in order to support sophisticated research requirements. Some examples might include census data, medical research data, and space exploration data.

3. *Electronic archival records can often be transferred to COM or COLD media, both of which are better and more practical for permanent archival storage.* Computer-output microfilm (COM) often provides a better medium for archival retention than magnetic media. If it is properly produced and stored, COM can offer excellent archival properties for the permanent preservation of computer data. The microfilm (or microfiche) can be produced at a point in the life cycle of the records when they no longer need to remain in a computer-processable format but require archival retention. At a more sophisticated

level of technology, computer-based archival records can sometimes be preserved on COLD (computer-output-to-laser-disk) media, which would provide better archival properties than magnetic media, but still may not be sufficient to ensure the same degree of permanent usability as hard copy or microfilm media.

The archives of most organizations constitute a very small percentage of the records holdings, usually not over 1 to 2 percent and seldom more than 5 percent. However, this small quantity of records is extremely important to the life and culture of the organization, and the records manager must be both intellectually and technically equipped to manage these archival records. Otherwise, the corporate memory will be lost to history.

## SUMMARY

*Archives* are defined as "the noncurrent records of an organization preserved because of their continuing, or enduring, value." These are records that never lose their value and thus require permanent preservation in an archival repository. Formal programs for the preservation and use of archival records are called archives management programs. These programs are often run by one or more archivists, although records managers frequently play the primary or a secondary role in selecting the records that will be preserved in the organization's archival repository, or in managing the facility itself.

Archives management programs consist of a number of basic archival functions; the most important are appraisal, accessioning, preservation or conservation, arrangement and description, and reference services for archival records.

The records management profession evolved from the archival profession in the United States during the 1950s, and today the two professions have separate and distinct identities. In the government arena, however, the relationship between archives and records management is still quite close. The two professions share much in common: they manage the same records media; both are concerned with the quality and condition of records; and both use similar systems and techniques to facilitate their access and use.

There are three types of archival repositories: public archives, private archives, and manuscript collections. An archival record is one that has evidential value or informational value. *Evidential value* means that the record documents the function and activities of an organization. *Informational value* means that the record provides

unique or valuable information for research and is not necessarily associated with the function or activity of an organization. These record values constitute the essence of the archival appraisal function—making the critically important decisions about which records to retain for posterity and which ones to destroy.

Activities of an organization are either substantive or facilitative. They are substantive when they contribute directly to the organization's functions and facilitative when they are supportive in nature and are common to many organizations that have different functions. Substantive activities usually produce a larger quantity of archival documentation than facilitative activities. These factors must be considered in the archival appraisal process.

Archival records are arranged according to the principles of provenance and original order. These principles mean that the records should be grouped according to their origin and that the order which was used during their active life should be retained. Under these principles, the records of an organization will usually be preserved in hierarchical groupings that correspond to their provenance and original order. These groupings are the record group level, the subgroup level, the records series level, the file unit level, and the document or item level.

Archival indexes, or finding aids, consist of inventories, registers, guides, catalogs, shelf lists, and other types of indexes used to describe the records of individual record groups or collections of manuscripts, so as to facilitate access and use of the records.

Archival records should be preserved in facilities and equipment designed to ensure their permanent life, to arrest further deterioration, and to ensure that the records will remain in a usable condition. Encapsulation and archival microfilming are common preservation techniques; lamination is seldom used as an archival preservation method today.

The business archives is established to preserve the history of corporate organizations and to serve the needs of scholarly research, public rela-

tions, and posterity. The records manager frequently serves as the archivist and must make appraisal decisions as part of the retention program. The business archives is frequently a part of the records center.

Archival automation programs are used to computerize the finding aids of a repository, so as to facilitate access and use of its holdings. In a larger context, these programs are also concerned with developing national standards for archival automation, so that the finding aid data of individual repositories can be electronically shared with other repositories throughout the country. Finally, archival automation is concerned with the preservation and use of electronic archives—records of historical value which reside on various types of computer-processable storage media. In recent years the development of PC hardware and applications software specially designed to automate archival finding aids has provided new opportunities for archival repositories to take advantage of computer technology to improve access and use of their holdings.

#### QUESTIONS FOR DISCUSSION

1. Why is it important for the records manager to have an understanding of archives management?
2. List and describe briefly four basic archival functions.
3. At what time in the life of records are they usually appraised for their archival value?
4. What are the three general types of archives? What are the purposes or functions of each?
5. What is the difference between the substantive activities and the facilitative activities of an organization?
6. What are the distinguishing differences between the evidential value and the informational value of records?
7. Explain the difference between provenance and original order.

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8. Why must restrictions be placed on the use of, or access to, archival materials?
  9. Identify the archival values possessed by business records.
  10. Identify the steps involved in establishing and operating a business archives. Why is each step essential?
  11. What factors must be considered in the preservation and care of material stored in an archives? Explain the importance of each.
  12. Describe one of the several major projects undertaken at the national level to develop national standards for archival finding aids.
  13. Electronic archives will often be impractical for all but the largest and most specialized archival repositories having sophisticated research requirements. Explain why.
  14. Describe the principal advantages of PC-based archival automation programs over their mainframe-based counterparts.
- b. Write a report to the vice-president of administrative services
    - (1) explaining the need for an archives management program within your organization and (2) requesting authority to establish the program.
  - c. Attach an annotated bibliography (approximately 60 words per article) to support your request.
4. Outline a 40-minute speech, to be presented at the annual convention of the Society of American Archivists, on the topic "Appraisal Criteria for Archival Records."
  5. Prepare a plan for archival automation of your organization's archival repository. Indicate the objectives and benefits of the program and the basic approach for computer technology to be employed.

#### PROJECTS

1. The Association of Records Managers and Administrators' board of directors has asked you to make a survey of its membership to determine the status of business archives. Prepare a questionnaire, which is to be sent to all members of the association, to gather the appropriate data.
2. Write an article on the topic "The Influence of Automation on Archives Management" for publication in *American Archivist* magazine. Your article should be between 1,000 and 1,200 words. It should include a bibliography consisting of at least five periodical references.
3. As the records manager in a large organization, you have decided to seek permission to establish an archives management program.
  - a. Read at least three periodical articles that will provide you with background

information for justification of your request.

#### CASE PROBLEM

The Life Insurance Company of North America (LICNA) has just completed an inventory of all of its records. Many of the records found in an old warehouse date from 1910, when the company was founded. LICNA's management feels that many of the records may have historical value, but it does not want to retain all to preserve a relative few. About one half of the records pertain to LICNA, and the other half pertain to several smaller insurance companies that have been merged into LICNA over the years. The archivist is asked to make a tentative appraisal of the records for historical value from a skeletal list provided. If the tentative appraisal warrants, a detailed appraisal will be commissioned. You have been assigned to assist the archivist. From the following list, which represents records from all companies, indicate which records would most likely *not have* historical value and explain why. Of those records that are to be preserved, which do you think would be essential to reconstruct a basic history of the company?

Register of canceled bonds, 1910-1925  
 Minute books of directors meetings, 1910-1946  
 General ledgers, 1945-1946  
 Journal entries, 1910-1946  
 Annual reports to policyholders, 1910-1946  
 Salary schedules for officers, 1910-1935  
 Personnel files (incomplete series): clerks and operating personnel, 1919-1934  
 Reorganization proceedings (bankruptcy), 1932  
 Bills of lading, 1941-1945  
 Trial balances (accounting records), 1927-1940  
 Canceled stock certificates, 1951-1956  
 Correspondence files of corporate secretary regarding legal matters, 1920-1955  
 Canceled property leases, 1960-1975  
 Album of advertising clippings, 1923-1935  
 Box of photos, unidentified, dates unknown but obviously old  
 Miscellaneous correspondence files of the president's office dealing with various financial matters, 1945-1955  
 Payroll records, 1923-1937  
 Reports of state insurance examinations, 1910-1927; 1975 to present  
 Acquisitions of other companies, 1965 to present  
 News releases, 1985 to present  
 Videotapes, 1988 to present  
 Purchase orders, 1985 to present  
 Accounts payable files, 1985 to present

#### NOTES

1. National Archives and Records Administration, *A Federal Records Management Glossary* (Washington, D.C.: U.S. Government Printing Office, 1989).
2. For further readings on each of these basic archival topics, see the books published in the "Archival Fundamentals Series," published by the Society of

American Archivists, Chicago, Illinois. See particularly: James M. O'Toole, *Understanding Archives and Manuscripts*, 1990; Frederic M. Miller, *Arranging and Describing Archives and Manuscripts*, 1990; Thomas Wilsted and William Nolte, *Managing Archival and Manuscript Repositories*, 1991; F. Gerald Ham, *Selecting and Appraising Archives and Manuscripts*, 1993; and Mary Jo Pugh, *Providing Reference Services for Archives and Manuscripts*, 1992.

3. See T. R. Schellenberg, "Archival Interests in Records Management," in *Modern Archives: Principles and Techniques* (Chicago: University of Chicago Press, 1956), pp. 26-43; Frank B. Evans, "Archivists and Records Managers: Variations on a Theme," *American Archivist*, Vol. 30, 1967, pp. 45-58; Richard H. Lytle, "The Relationship Between Archives and Records Management: An Archivist's View," *Records Management Quarterly*, April 1968, pp. 5-8; Bill Walker, "Records Managers and Archivists: A Survey of Roles," *Records Management Quarterly*, January 1989, pp. 18-20; Robert L. Sanders, "Archivists and Records Managers: Another Marriage in Trouble," *Records Management Quarterly*, April 1989.
4. Schellenberg, p. 149.
5. Kenneth W. Duckett, *Modern Manuscripts* (Nashville: American Association for State and Local History, 1975), pp. 101-107.
6. See Edie Hedlin, *Business Archives: An Introduction* (Chicago: Society of American Archivists, 1978); "Business Archives: A Special Issue," *American Archivist*, Vol. 45, No. 3, Summer 1982.
7. George David Smith and Laurence E. Steadman, "Present Value of Corporate History," *Harvard Business Review*, November-December 1981, pp. 164-173.
8. David O. Stephens, "The Records Manager's Role in Archives Management." Paper presented to the Diamond State Chapter, ARMA International, Wilmington, Delaware, November 15, 1983.
9. See Charles Dollar, *Archival Theory and Information Technologies: The Impact of Information Technologies on Archival Principles and Methods* (Macerata, Italy: University of Macerata Press, 1992). Available from the Society of American Archivists, Chicago, Illinois.
10. Duckett, p. 161.

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# Lockheed Corporation

### The Corporate Records Center

The Lockheed Corporation, Calabasas, California, recognized the value of a records center as one of the most important components of an effective records management program and built its own corporate records center in 1965.

Lockheed ranks among the top 45 industrial companies in the United States and the second largest defense prime contractor. It employs 70,300 people around the world, of whom more than 20 percent are scientists and engineers. Lockheed is preeminent in the fields of spacecraft, space systems, fleet ballistic missiles, and aircraft for airlift, reconnaissance, antisubmarine warfare, and other special missions. The corporation is a major producer of tactical weapon systems, electronics and communications systems, marine systems, and ships, and is a major provider of scientific, engineering, and technical support services.

As Corporate Director, Management Support Services, for Lockheed, William Benedon is responsible for corporate administrative services, including word processing, graphic arts, and office layouts, and for coordinating and directing the records management efforts of the multidivision company operation involving all aspects of records administration and office automation applications. He is a Certified Records Manager and holds a master's degree from New York University Graduate School of Business Administration. Before joining the Lockheed staff in 1954, he was Records Administrator for the state of New Jersey. In 1980, Mr. Benedon received the Silver Anniversary Special Services Award from the Association of Records Managers and Administrators (ARMA) for 25 years of outstanding service and contributions to the association and to the records management profession. He is also editor emeritus of the association's magazine, the *Records Management Quarterly*. The "William Benedon Professional Achievement Award" was established in his honor in 1994 by the Greater Los Angeles Chapter/ARMA.

The Lockheed records center was planned as part of the total corporate records management program under the leadership of Mr. Benedon. He believes "when scientifically designing for housing records, a records center provides maximum capability for economy, rapid processing and retrieval, and security."

Located in Lockheed's Kelly Johnson Research Center Facility in Saugus, California, the center was designed to provide the optimum in the maintenance of inactive, archival, and vital records.

### Basic Structure

The center is a single-level, square building with a loading dock area. The exterior walls are 6-inch, tilt-up concrete slab, and the interior walls are 8-inch concrete block. The building is 17 feet of clear height in storage and service areas, and there are no windows. It is a class B vault with two 2-hour doors. A vital records

vault is located underground below the office area. This is a class A vault with a 4-hour door and 12-inch reinforced concrete walls.

### Size and Capacity

The building has a total of 57,127 square feet. It consists of the main area, 49,478 square feet; the vital records area, 3,434 square feet; the processing area, 1,372 square feet; and the office area, 2,743 square feet. Administrative space is provided for the supervisor and other personnel, for a conference room, for a reference room, and for a lobby. The building can house 244,769 cubic feet of records. It has built-in expansion capacity. Since it was first occupied in November of 1965, two additions have been completed in 1970 and 1981. The present holdings of the center are 235,000 cubic feet.

### Shelving and Containers

All steel, 30- by 42-inch and 32- by 42-inch bolt-assembly shelves on 23-inch centers are used. They are placed back-to-back with 4-inch space on the 30- by 42-inch units to prevent overhang. A combination of T- and L- shaped uprights are used for support. Standard corrugated containers are used—12- by 10- by 15-inch double wall, 125 lb., hand holes, shoe lid cover. X-ray and magnetic tape containers are 6 by 16 by 15 inches. Engineering drawing containers are 4 by 4 by 45 inches with tuck-in ends. Aisles between shelving are 32 inches. In the engineering area, however, they are 45 inches. The main aisles are 6 feet, 7 inches, wide.

### Servicing and Handling Equipment

Equipment used in the Lockheed records center includes steel 9-step pulpit ladders, a hydraulic lift platform with 500-pound capacity, a forklift to handle 2,000 pounds, conveyers, jacks, library trucks, a pickup van for special delivery of records, a dumbwaiter that operates between the main floor and the underground vault, and a laser copier and fax for reference needs. There are also 5 area telephone reference stations in the main area with direct dialing to all Lockheed facilities and a two-way, on-spot communication system.

### Air Conditioning and Humidity Control

Because appropriate atmospheric conditions are critical in effective maintenance of records, the Lockheed center has air conditioning throughout the entire building with 16 units on the roof. This design prevents the entire system from ever going out at one time. The vault, as well as the two additions, are humidity controlled at a 60 percent maximum level to protect microform and magnetic records.

### Fire Prevention

Because fire is a threat throughout the main area, security is provided. Clearance is a event of a dis.

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### **Fire Prevention and Security**

Because fire is always a major threat to records, the center has a sprinkler system throughout. A fire hose as well as extinguisher stations are also provided. Because the main area is a class B vault and the underground section is a class A, maximum security is provided. There is also 24-hour guard service at the facility. Security clearance is also a requirement. Emergency lighting is available at the center in the event of a disaster.

### **Microfilm and Magnetic Tape Storage**

Microfilmed vital records are maintained in the underground vault. Motion picture film is stored in the vault and also in the main storage area. Data processing tapes for vital record rotation and retention are kept in the vault as well as in the main storage area.

### **Records Destruction**

A majority of Lockheed's records are recycled. The bulk of the classified records are destroyed by a commercial disintegration company. Small volumes are destroyed by a pulping machine.

### **Automated Control System**

The center uses a fully automated on-line system for control. It is the LARCS (Lockheed Automated Records Control System), which was designed and developed in-house. It operates on NOMAD 2 database on the MDAL 1400A mainframe computer. The system covers all aspects of records center operations as well as company-wide retention scheduling, vital records, and other areas of records management. It operates via PROF terminals, which also provide electronic mail and word processing capability.

### **Personnel**

The efficiency of the center is reflected in the minimal number of employees required to operate it. There is a center supervisor, one records center control clerk, and three records center clerks.

All aspects of the Lockheed Corporate Records Center show that the goals of a facility of this type are being met: economy, efficiency in processing and retrieval, and security.

## Glossary

- Accession** A shipment of records received into the Records Center or archives for storage and retrieval.
- Accession book** A control device used in numeric filing to keep track of new files as they are created.
- Accessioning** The conveyance or transfer of the legal and physical custody of archival records from their offices of creation to an archival repository; also, the creation of records documenting receipt and acceptance of the records into the archives.
- Access restrictions** In archives management, the policies imposed by an archival repository to limit or restrict open access to and use of some or all the holdings of the repository to certain persons and/or for certain periods of time.
- Access time** The interval between the time records are called for or requested and when delivery to the requesting party is completed.
- Accuracy ratio** A measure of how many of the requested documents were actually found.
- Acid** A chemical substance capable of forming hydrogen ions when dissolved in water. Acids can weaken cellulose in paper, board, and cloth.
- Acid-free** In chemistry, any material with a pH of 7.0 or higher. Acid-free paper refers to paper that is free of active acid during its manufacture. However, over time, acid may form in some papers and boards.
- Acid migration** The transfer of acid from an acidic material to a less acidic or neutral one. This can happen when an acidic material and a less acidic material come into contact with each other, such as the cover of a book or pamphlet to the less acidic paper of the inside text.
- Activity (reference) ratio** A measure of file activity. It is calculated by dividing the number of records requested each month by the total number of records in the system.
- Administrative value** In records appraisal, the usefulness of a record in the conduct of an organization's business; the value of a record for the purpose for which it was created. Also referred to as *operational value*.
- Adverse inference** A finding by a court that information contained in records that were inappropriately destroyed by a person or party is incriminating or unfavorable to that party, even though the information is not available to the court.
- Air drying** A method of drying damp (but not completely soaked) paper records by placing the records in a cool, dry room, and exposing them to maximum air flow, frequently aided by the use of fans.
- Alkaline** Having a pH greater than 7.0. Alkaline substances may be added to materials to neutralize any acids present. They may also be added during manufacturing (as of paper) to form a buffer against the later formation of harmful acids. Some common buffers are magnesium carbonate and calcium carbonate.
- Alphabetical filing** Arrangement of records in accordance with the alphabet. The records may be arranged by subject, name, organization, or place.
- Alpha classified** Subject files without the use of codes.
- Alphanumeric** A filing system combining alphabetic and numeric symbols to develop codes for classifying information.
- American Standard Code for Information Interchange (ASCII)** A widely utilized coding scheme which specifies bit patterns for computer-processible information. The ASCII coding scheme is utilized in virtually all minicomputers and microcomputers and in many non-IBM main-frame computer systems.
- Analog copier** A copier that can transfer the image from the original to the copy using the same general principle as a camera.
- Analog image** A non-electronic image; non-digitized.
- Analytical index** An index that isolates single items or concepts, as in an index of specific topics of information included under broader headings.
- Aperture card** A tab-size card with a rectangular hole cut into it which is designed to hold a frame of microfilm.
- Appraisal, records** The process of determining the value and thus the disposition of records, and designating them as either temporary or permanent, which may be accomplished as a part of the pro-

cess of developing records retention schedules or as a separate act. The evaluation of a document's worth or value for retention or archival purposes, based upon its current or predicted future use(s) for administrative, legal, fiscal research or historical purposes.

**Archival, archivally sound** Durable, permanent, and suitable for preservation in archives. Although no specific standards exist for labeling a material archivally sound, it is understood to suggest that the material is very durable.

**Archival value** In records appraisal, the determination that records possess current or future value in elucidating the history or an organization and are thus worthy of permanent preservation. Also referred to as *historical value*.

**Archives** The noncurrent records of an organization preserved or appropriate for preservation because of their continuing, or enduring value. A place in which archival records or other important historical documentation are permanently maintained.

**Archivist** A person responsible for or engaged in one or more of the following activities in an archives: records appraisal and disposition, accessioning, preservation, arrangement, description, reference service, and exhibition or publication of archival materials.

**Areal density** The number of bits of data that can be recorded in a given space on a particular medium.

**Arrangement, archival** The process and results of organizing archives, records and manuscripts in accordance with accepted archival principles, particularly the principle of *provenance*, at as many as necessary of the following levels: record group, subgroup, collection, records series, file unit, and individual document or item. Arrangement of archival materials into logical groupings based on these general to specific levels of arrangement is designed to establish physical and intellectual control over the records and facilitate their access and use.

**Association of Records Managers and Administrators, Inc. (ARMA International)** A professional association representing records managers and records management interests throughout North America and in other countries. Membership is approximately 11,000.

**Authority list** Relative index showing key words by which subjects are classified, also known as a thesaurus.

**Authorization** Signatures of top management who approve a particular project.

**Automatic teller machines (ATM)** Terminals that enable depositors to deposit and withdraw funds and transfer funds from one account to another without human assistance.

**Automation, records** A general term referring to the application of a wide variety of computer-based systems and technologies to improve the management and performance of recordkeeping systems.

**Auxiliary file** A synonym for random file or a file of supporting documents.

**Backup** In vital records protection and disaster recovery planning, the act of creating an extra copy of vital data resident on the internal storage device of a computer and placing that copy in a secure location remote from the site where the computer is located.

**Bar code** A type of coding used in automatic identification systems consisting of lines or bars and spaces of varying widths positioned in a vertical format to create an optical code field which, when read by an optical reader, can be converted into computer-processible data. In records management applications, bar codes can be affixed to loose paper documents, file folders, records storage cartons, microfilm, or other record media to provide an enhanced level of item tracking and inventory control over a collection of stored records.

**Bar code sorters** A machine reader that sorts readable mail quickly and accurately by bar codes printed on the mail.

**Baud** A unit of transmission speed in electronic communications; generally, a baud equals a bit of data per second.

**Billing report** A report that includes rent, maintenance, taxes, installation and removal charges, prompt payment discounts, and copy credits.

**Bit** Abbreviation for binary digit; the smallest unit of information recognized by a computer. Also used as a unit of measurement of a computer chip's memory capacity.

**Bit mapping** A process of scanning a document to convert it to binary codes, representing either black or white pixels, which are recorded on an optical disk or magnetic media for electronic display of the document image. Also called *raster scanning*, *digitizing*, or simply *scanning*.

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**Bits Per Inch (BPI)** A measure of the density of data on magnetic tape.

**Bleed** To run off the edge of the trimmed printed sheet.

**Block numeric** Consists of assigning a block of numbers to each of the major functions of the organization.

**Body of the form** A part of a standard business form consisting of grouped or sequenced items calling for the information desired.

**Boolean logic** In electronic recordkeeping systems, a search technique in which the terms *and*, *or*, or *not* are used in a search statement for the purpose of expanding or limiting the scope of the search, thereby providing more precise retrieval of required data.

**Box design** A set-up that includes printed captions located in the upper left corner of the form.

**Break** Subdivision in a file classification system.

**Bulletin boards** Multiple conversations take place on the computer at the same time and the user can choose in which conversation to participate.

**Business archives** The historically valuable records of a private business corporation.

**Business form** A document with a fixed arrangement of captioned spaces designed for entering and extracting prescribed information. The most widely used type of business record.

**Business reply mail** Envelopes provided to customers to facilitate orders, payments, and subscriptions.

**Byte** A sequence of adjacent binary digits that are operated upon as a unit and constitute the smallest addressable unit of data in a computer system.

**Calcium carbonate** A commonly used buffer. See *alkaline*.

**Caption** Information that appears on the label of a guide, folder, or file drawer.

**Carousel file** A file which rotates horizontally like a lazy Susan and may house letter-size documents or cards.

**Cartridge, film** The container that facilitates loading and unloading a reel of microfilm.

**Cathode ray tube (CRT)** Device similar to a television tube, used to display text in computer systems.

**Centralized files** Records of common interest to many employees that are placed in one location under the control of one supervisor.

**Central processing unit (CPU)** The part of the computer that contains the main storage, arithmetic

unit, and special register groups; Performs arithmetic operations, controls instruction processing and other basic computer operations.

**Central reproduction** A location housing sophisticated copiers and/or printing equipment geared to volumes of from 100,000 to 450,000 copies per month at speeds exceeding 90 cpm.

**Certified mail** Mail for which the Postal Service provides a mailing receipt. A record of delivery is maintained at the recipient's post office.

**Chain index** An index that links subjects in a hierarchy to their direct relations.

**Charge-back** A system of charging whereby total costs of the copier are divided by total number of copies produced to determine cost per page. This cost per page is then charged to each department for the number of copies it produced.

**Charge-out** A record made of papers removed from the file; the act of removing papers from a file for loan purposes.

**Checklist** A list contains step-by-step procedures on the job, lists of equipment and materials used, and/or questions to be asked in completing tasks.

**Chemical stability** The characteristic of a material that indicates its resistance to degradation and decomposition. A necessary characteristic of materials used in preservation. See also *archivally sound*.

**Chief information officer** A senior executive position established in many organizations whose primary responsibility is to coordinate, manage and integrate the many disparate information-related functions of the organization.

**Chips** Microprocessors that are complete computers on a single chip of silicon.

**Chronological filing** Arrangement of documents in order of date, usually for follow-up of activities or information.

**Cine mode** A manner of positioning an image on microfilm when the data line run the width of the film. This is also referred to as *portrait mode*.

**Classification** A process of putting like things together. Also, a group of records related by common characteristics.

**Classified filing** A system in which related material is filed under a major subject heading. Also known as the *encyclopedia system*.

**Client/server architecture** A term used to describe how the user (client) works with and uses the various servers (PCs) on a telecommunications

- network. Other network servers are: File Servers, Database Servers, Image or Optical servers, OCR, FAX and Print Servers, and Scan/Work Station Servers.
- Close of the form** A space on a standard business form for approving signatures.
- Code** A piece of information such as a number, an alpha abbreviation that is easily remembered, or nonsignificant alpha letter or letters.
- Coded classified** Subject files classified with the use of codes.
- Coding** Marking the indexing units on the document to be filed.
- Color coding** A system in which a color is used to represent a number, a word, or a group of words.
- Comic mode** A manner of positioning the image on microfilm when the data lines run the length of the film. This is also called *landscape mode*.
- Commercial records center** A business that provides off-premises records service to various businesses through storage, retrieval, and disposition of inactive business records, and other related tasks for an established fee, or contractual arrangement.
- Compact disk, read-only memory (CD-ROM)** A compact laser disk with read-only memory, designed for recording document images and information for mass distribution.
- Compression** A process of eliminating the zero codes (white spots) on the disk in order to increase storage capacity of the optical disk. A compression ratio is a relative indication of the amount of compression used.
- Computer-assisted retrieval (CAR)** System that uses on-line digital data to locate microfilm images arranged in random order, usually on a reel format.
- Computer conferencing** A method of sending, receiving, and storing typed messages within a network of computer users.
- Computer output microfilm (COM)** Process of recording computer digital output directly onto microfilm.
- Computer output to laser disk (COLD)** Process of transferring computer output to and optical disk (See also *COM*).
- Conservation** In archives management, the specific steps undertaken to maintain, repair, restore or otherwise conserve archival records. Basic archival conservation techniques include encapsulation, fumigation, and microfilming. Also called *archival preservation*.
- Contact printing, microfilm** A process of film image duplication requiring the emulsion of the original film to be placed in contact with the emulsion of the copy film while exposed to a light source, followed by development.
- Contempt of court** A finding by a court or administrative tribunal where the court or tribunal orders documents to be produced by a person or party for use in legal proceedings and the party defies the order by failure to deliver the requested documents to the court.
- Continuous forms** A group of forms consisting of strips of connected forms that can be separated by perforations. Also known as *fanfold*.
- Control card** An index card used to locate and retrieve a record stored in the records center.
- Convenience files** Files located near the point of usage.
- Convenient copier** A copier that usually operates at speeds ranging from 10 to 45 copies per minute and is used in installations generating between 1,500 and 20,000 copies per month.
- Conveyers** A type of electromechanical filing system that can bring carriers or folders to the point of reference or can be used to move documents either horizontally or vertically.
- Coordinated index** An index in which each document or item is numbered as it is received and words are extracted directly from the text and are used without change for index terms (uniterms).
- Copy center** A dedicated area or remote operation designed for reproduction.
- Copy film** The film used to duplicate an original film through contact printing.
- Copy management** The system of supervision that determines how reprographics equipment is used, identifies the requirements for duplicate records, and provides control over copier purchase and production costs.
- Copying** Process of making copies either with an office copier, offset, or other type of duplicator.
- Correspondence** Interoffice letters, letters, memorandums, postal cards, printed information slips, and so on.
- Correspondence manual** A manual used as a means of standardizing the methods and products of a correspondence department in a large organization.

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- Cost-avoidance justification** A method of proving the value of new equipment or procedures by demonstrating that other costs can be avoided.
- Cost/risk/benefit analysis** In records retention decision-making, the concept that records should be retained based on the cost, risks, and benefits of retaining or destroying the records and how these factors decline, expire or increase during their life cycle.
- Cross index** An index that lists the records series in alphabetical order, cross-referenced to their alphanumeric codes.
- Cross reference** A notation showing that the records may be filed elsewhere.
- Customer** A user of records center services.
- "Cut" sheets** Single-copy form which may also be referred to as a *flat form*, *flat sheet*, or *single sheet*.
- Data** A general term used to denote raw facts and figures from which conclusions may be inferred.
- Database** In electronic recordkeeping systems, a set of computer data, consisting of as least one file or group of related files, usually stored in one system or subsystem and made available to one or more users for various applications.
- Database management system** Software that integrates data files into a database and then integrates it with application programs and computer hardware.
- Database server, optical disk system** A server that controls and processes the indexes to the optical disks on a telecommunications network.
- Data dictionary** Broadly, a compilation of significant data elements in a database, the standards for them, and the procedures for processing them. In records management, a listing of document indexing terms which are designed to provide consistency in identifying documents and files in an electronic recordkeeping system so that the records may be effectively retrieved.
- Data element** In electronic recordkeeping systems, a combination of characters or bytes referring to one separate item of information, such as a name, address or age, in a database. Also referred to as a *data item*. Standard means for information defined in EDI.
- Data files** Computer-processible files which store numeric data (and sometimes data in text format) as quantitative values, which permits the numbers to be manipulated using arithmetic computations.
- Data range** The period of time covered by records in the file.
- Data set** A separate, discrete body of computer data (text files, data files, or image files) that is maintained within a computer system, subsystem or database and is logically related, serves a common purpose or function, and can thus be considered as a separate unit for records management purposes. Also referred to as an *electronic records series*.
- Data validation** The process of verifying the accuracy of all data entered into an electronic recordkeeping system, so as to ensure the integrity of the system.
- Decentralized files** Records that are made and used by a single organizational unit and that are maintained and controlled at the point of origin.
- Decimal-numeric coding** A numeric coding system for subject filing systems.
- Decollator** A machine that separates copies of computer printouts and removes the carbon paper.
- Deleting** In electronic recordkeeping systems, the process of removing or erasing recorded information from a medium, especially from a magnetic disk, diskette or tape. Sometimes called *scratching* or *erasing*.
- Descriptor** A broad subject heading that stands for an idea or concept.
- Desktop publishing** The use of a personal computer to format documents to appear as if they are typeset.
- Destruction authority** A formal authority to destroy records.
- Destruction, records** The process of obliterating or otherwise rendering illegible, irretrievable, or unusable information contained in a record.
- Destruction suspension** The procedure to cease the routine destruction of records when it is determined that those records may be relevant to foreseeable or pending litigation, a government investigation, or a regulatory audit.
- Diazo film** A contact print film with a diazonium coated emulsion used to duplicate microfilm images.
- Digital copier** A type of copier that scans and transfers digital impulses to paper.
- Digitize** The process of electronically converting an analog image or document to a bit map image by electronic scanning.
- Digitizer** An alternate name for an electronic image scanner which "digitizes" or "raster scans" a document image.

- Direct-access filing** A system that permits access to files without reference to an index.
- Directive** A written instruction communicating policy and/or procedures in the form of orders, regulations, bulletins, circulars, handbooks, manuals, notices, numbered memorandums, and similar issuances.
- Directory** A method of organizing and managing PC-based electronic records into logical groups, with an index or table of contents listing all files contained within the directory to facilitate their access and use.
- Disaster** A sudden, unplanned calamitous event that creates an inability on the part of an organization to perform critical business functions for some period of time.
- Disaster preparedness** A set of policies and procedures to make sure employees are aware of how to handle potential disasters, as well as actual implementation of such procedures.
- Disaster recovery manual** A manual consisting of a disaster recovery plan, information about disaster preparedness, procedures for disaster-in-progress, and plans for disaster recovery.
- Disaster recovery plan** A plan consisting of information about structures, occupants, and hazardous materials, as well as procedures to safeguard records.
- Disaster recovery planning** The advance planning and preparations necessary to minimize loss and ensure continuity of the critical business functions of an organization in the event of a disaster.
- Discovery** The legal process that permits parties involved in a legal proceeding to obtain records and information relevant to the proceeding that are in the possession of another party.
- Disk drives, optical** Devices used to drive, record, and read optical disks.
- Diskettes** Platter-shaped devices used for the storage of electronic records in computer systems. Also termed *floppy disks*; these magnetic storage devices are commonly used for off-line storage of electronic records in PC computing environments.
- Dispersal** In vital records protection, the act of placing copies of vital records in locations other than those housing the originals. Dispersal may be "built in" as a part of existing procedures, or "improvised" by creating an extra copy of the vital records for storage in a secure location, usually remote from the organization's primary place of business.
- Disposal** In records retention programs, the process of destroying obsolete records.
- Distribution list** A file that identifies the location of every recipient of the document.
- Document** A record which constitutes the smallest unit of filing, generally a single letter, report, form, or other item contained within a recordkeeping system. Also, the smallest unit of filing. Sometimes called a *page*.
- Document production** The process of retrieving and producing a record for use in a legal proceeding.
- Drawer file cabinet** Vertical file cabinet, also called standard filing cabinet which usually houses correspondence.
- Duplex numeric filing** A system in which numbering consists of two or more parts separated by a dash, a space, a period, or a comma, such as 85-1.
- Duplicating** The process of making duplicate copies.
- Electronic archives** Historically valuable records that exist in machine-readable or computer-processible form.
- Electronic data interchange (EDI)** A standardized method of electronically transmitting and processing data from one computer to another.
- Electronic filing** The storage and retrieval of information in digital, computer-processible form.
- Electronic form** Any form designed for use with electronic equipment. May take the form of electronic forms composition, template electronic forms, full electronic forms, machine-readable forms, electronic data interchange, and electronic funds transfer.
- Electronic forms composition** The design of camera-ready copy for paper-based forms.
- Electronic funds transfer (EFT)** A subset of EDI which permits the transfer of funds from one account to another and to verify account balances around the world.
- Electronic mail (E-mail)** A message that is transmitted electronically from one computer terminal to one or more locations via telephone lines.
- Electronic records** Records containing machine-readable, as opposed to human-readable information and consisting of character-coded electronic signals that can be processed and read by means of computers.
- Electronic records series** A separate, discrete body of computer data (text files, data files or image files) that is maintained within a computer system subsystem or database and is logically related, serves

- a common purpose or function, and can thus be considered as a separate unit for records management purposes. In data processing terminology, referred to as a *data set*.
- Emulsion, microfilm** The silver halide coating on one side of the microfilm that retains the image photographed.
- Encapsulation** An archival conservation technique designed to assure the permanent preservation of valuable documents by "encapsulating" them between two sheets of polyester film, thereby arresting further deterioration.
- Encapsulation, polyester** Encapsulation using polyester film.
- Encyclopedic filing system** Topics are subdivided so that several folders may contain information pertaining to the main topic.
- Ergonomics** Science concerned with the design of an effective work space for people working with machines.
- Evidential value** The usefulness of records in documenting the functions and activities of an organization or institution; how it came into being, how it developed, how it was organized and the results of its activities. A primary criterion used in appraising records to determine their archival value.
- Exception report** Listing of those machines performing out of their recommended volume range.
- Expense-reduction justification** A method of proving the value of new equipment or procedures by demonstrating that current costs will be less.
- Express mail** Overnight mail service of the United States Postal Service.
- Extended binary coded decimal interchange code (EBCDIC)** A coding scheme which specifies bit patterns for computer-processible information for electronic records created on IBM mainframe and other large computers.
- External communication** The structured communication that is conducted with people and groups outside the organization.
- Facility management** Practice of coordinating the physical work place with the people and work of the organization.
- Facsimile (FAX)** A remote photocopying system which scans and transmits images to a receiving printer via telephone lines or satellite.
- FAX server, optical disk system** A server that controls all FAX Functions in the imaging system.
- Federal Records Act of 1950** A law enacted by the United States Congress that defined the term *records management* for the first time in any federal statute. This law also required all agencies of the federal government to establish a records management program.
- Fiberboard** A kind of paper board consisting of laminated sheets of pressed fiber.
- Field** A category of information that contains data items in a database. Also referred to as an *attribute*.
- File or files** A group of related documents. In paper-based recordkeeping systems, the singular form often refers to one or more documents contained within one file folder. The plural form is a general term which denotes a collection of records, or a group of related documents or file folders which have been arranged in a predetermined manner in order to facilitate their retrieval and use. In electronic recordkeeping systems, refers to a single or group of related computer-processible data resident on some type of electronic records storage device.
- File integrity** Accuracy and completeness of the records.
- Filename** In PC-based electronic recordkeeping systems, the name assigned to an individual document filed within the system, which serves as the means of retrieving it. May be combined with a "filename extension" to provide a more descriptive document identifier.
- File plan** A logical order of documents or files; an arrangement or scheme by which all documents may be stored.
- File server** A computer dedicated to processing and storing data in a network computing environment. Sometimes called a *network server*.
- File server, optical disk system** A server that controls information traffic on the network and provides necessary files and software.
- Filing** The process of arranging and sorting records so that they may be retrieved rapidly when needed.
- Filing manual** A manual that identifies the requirements and procedures for proper filing.
- Filing unit** Each word, abbreviation, or initial used to file information.
- Finding aids** In archives management, refers to a wide variety of archival indexing and retrieval systems and techniques to describe the holdings in an archival repository in order to facilitate their use.
- Fire-resistant file cabinet** A file cabinet or other

record container constructed with special insulation for the purpose of reducing the risk of loss of its contents from elevated heat conditions usually produced by fire.

**First-class mail** A service of the United States Postal Service used for letters, postcards, postal cards, and for sending checks and money orders weighing less than 11 ounces

**Fiscal value** In records appraisal, the usefulness of a record in serving as documentation of the financial transactions of an organization, or as evidence of the organization's tax liability.

**Fixed magnetic disk drive** A magnetic disk drive with non-removable, rigid platters; the most common type of hard disk drive. A direct access storage device.

**Flat filing** Wide, shallow shelves or drawers are housed in counter high units that provide a working surface.

**Floor load** The capacity of a floor area to support a given weight expressed in terms of pounds per square foot.

**Flowchart** A graphic illustration of the procedural steps in an operation.

**Fog index** A measure of readability based on length of words and length of sentences.

**Footprint** Space that is required for the item to stand on.

**Format** See **Layout**.

**Forms analysis** The process of determining what information should be provided on specific forms.

**Forms analyst** Person who determines the need for each type of form used by an organization and makes recommendations concerning cost reduction and efficiency improvements.

**Forms catalog** May range from a simple listing of forms by number only to comprehensive catalogs with detailed information.

**Forms control** Routines for designing, procuring, storing, distributing, reviewing and disposing of all of the organization's forms.

**Forms design** The process of assembling the required data into a logical format that satisfies recommendations made as a result of the analysis of forms.

**Forms distribution chart** A chart showing the existence of copies and the backtracking of copies.

**Forms inventory** A survey of all forms used to identify problems such as duplication or improper application of technology.

**Forms management** The function that establishes

standards for the creation, design, analysis, and revision of all forms within an organization and assures that they are designed, produced, and distributed economically and efficiently.

**Fourth-class mail** A service of the United States Postal Service used for packages weighing one pound or more; parcel post.

**Freeze drying** A method of drying wet paper records by quick-freezing and subsequently drying the records in a vacuum chamber.

**Fumigation** A method of conserving valuable documents by exposing them to a poisonous gas or vapor, usually in a vacuum or other airtight chamber, to destroy insects, mildew, or other hazards that may endanger them.

**Functional classification file** A forms control file that brings together forms serving a similar purpose so that they may be studied for possible combination.

**Functional filing** A method of filing that describes the records series by the functions they perform.

**Geographic file** A file in which records are arranged alphabetically according to location.

**Guide** In archives management, a type of finding aid that includes a general description of the holdings of an archival repository. Also, a divider used in files to identify sections of the file and to provide physical support for records.

**Guide tab** A projecting portion of a guide that shows the filing caption.

**Handbook** A publication consisting of established rules to be followed by employees in performing their individual tasks.

**Hard disk crash** The failure of a microcomputer's internal storage device, resulting in the instant destruction of all documents and data residing on the disk.

**Heading** The facilitative part of the form that includes a title and a form number.

**Hierarchical index** An orderly arrangement of items, or concepts, such as in a classified index.

**Hierarchical filing system** A filing system that uses a classification system to bring related material together.

**Historical value** In records appraisal, the determination that records possess value in elucidating the history of an organization and are thus worthy of permanent preservation as archival materials. Also referred to as *archival value*.

**HVAC** Heating, Ventilation, Air Conditioning.

**Image count** A method of retrieval of a microfilm

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- image, that optically counts the images on a roll of microfilm, using an external computer index to determine the image number.
- Image files** Electronic files that contain computer-processible images of documents for storage on magnetic or optical media.
- Imaging** A term used to describe the process of recording an image of a document on either microfilm or optical disk.
- Imaging, document** The process of creating an exact image of a document utilizing either electronic or photographic technology.
- Important records** Records containing information that is essential to operate an organization and protect its assets, but which could be re-created or replaced if destroyed. Decisions to take special measures to protect these records from loss should usually be based on a determination as to whether the cost of replacement exceeds the cost of protection.
- Improved dispersal** The creation of additional copies especially for dispersal.
- Inactive records** A series of records with a reference rate of less than one search per file drawer per month.
- Index** An arrangement of names or topics in either alphabetic or numeric order. A listing of the headings (titles, captions) of the files showing their locations.
- Indexing** In manual filing, determining the name or number under which a document is to be filed. In electronic filing, identifying the keyword under which a document may be retrieved.
- Indirect access filing** Reference to the code under which the material is filed must be made before the file can be referenced.
- Information** Generally, knowledge communicated by others or obtained by study and investigation. Intelligence which can be communicated in either graphic form or by alphanumeric characters. Facts or data communicated or received. Data placed into a meaningful context for users.
- Informational value** The usefulness of records in documenting the persons, things, or other matters dealt with by an organization, in contrast to documenting the organization's functions and activities. A primary criterion used in appraising records to determine their archival value.
- Information management** The administration of information, its use and transmission, and the application of theories and techniques of information science to create, modify, or improve information handling systems.
- In-House** Performing a function within the organizational structure, rather than through an outside source. Opposite of **Out-sourcing**.
- Ink-jet printing** A printing method using tiny drops of ink that are sprayed onto specially coated paper.
- In-plant** Refers to a printing facility set up inside an organization whose primary business is not printing.
- Input** Data entered into a computer system, usually for future retrieval and manipulation.
- Inspection** The process of checking records to be sure that they are released for filing.
- Institute of Certified Records Managers** An organization which administers a program for professional certification of records management specialists. Certification is awarded based on satisfactory completion of a written examination, as well as review of professional credentials.
- Instructions** A list that explains how to fill in the form and what to do with the form.
- Intelligent character recognition (ICR)** A data capturing process that can capture data from any size, shape, or type of paper, without the restrictions typically associated with other such processes.
- Intelligent processing unit** Computer interface that permits a copier to be used as both a printer and a scanner.
- Interfile** The process of putting documents in their proper sequence and place in a file when they have not previously been withdrawn.
- INTERPOST** International facsimile message service available between the United States and more than 40 foreign countries.
- Inventory, archival** In archives management, a type of finding aid used to describe collections or groups of records in a manner that facilitates their retrieval and use.
- Inventory, records** An identification, description, and qualification of all of the records possessed by an organization.
- Job interrupt** A device that permits the operator to stop a job in progress to allow another job to be completed.
- Job recovery** A device in the copier's memory that tells the operator how to restack the originals so that the copy job can be completed without missing any pages.

- Jukebox** A multi-disk computer-controlled device used to store and robotically retrieve the optical disk and to mount the disk on a drive with rapid on-line response.
- Keyword searching** In electronic recordkeeping systems, the ability to search for any single word within certain or all fields of a computer database, thereby providing more precise retrieval of required data.
- Lamination** An archival conservation technique involving the deacidification of paper documents, which are then sealed between two sheets of plastic. The technique is not widely practiced today because it alters the original state of the documents.
- LASER** An acronym from its descriptive name, meaning Light Amplification by Stimulated Emission of Radiation. It is an extremely narrow and coherent beam in the visible light spectrum. Among other uses, it records and reads bit-maps on optical disks.
- Latent image, microfilm** An undeveloped image on the emulsion of exposed microfilm.
- Lateral file** Side-open file cabinet; may also mean shelf filing.
- Layout** The shape, size, style, and general makeup of a particular form. Also called format.
- Legal retention considerations** A term that refers to a number of legal issues that may indicate how long an organization should retain certain of its records so that it can successfully defend itself against litigation actions, enforce its legal rights, or meet its other legal obligations and needs.
- Legal retention research** The process of identifying and interpreting the laws and regulations promulgated by all jurisdictions which contain records retention requirements applicable to an organization.
- Legal value** In records appraisal, the usefulness of a record in complying with statutes and regulations, as evidence in legal proceedings, or as legal proof of business transactions.
- Life cycle** The life span or time period from the creation or receipt of a record through its useful life to its final disposition. The five stages in the life cycle of a record include the creation stage, the distribution and use stage, the storage and maintenance stage, the retention and disposition stage, and the archival preservation stage.
- Lignin** A plant substance generally responsible for the strength and rigidity of plants but considered a detriment to the stability of manufactured paper and board. The term *lignin-free* indicates that the majority of lignin has been removed during the manufacture of paper.
- Limitation of assessment** The period of time, after a tax return is filed or the tax becomes due, during which the taxing agency can determine or modify the tax owed. This time period is often considered to be a relevant factor in making records retention decisions concerning various types of financial records which may be subject to audit.
- List index** The simplest kind of index to compile—an alphabetical list of words or phrases.
- Local area network (LAN)** The interconnection of computing devices within a defined and relatively limited geographical area, thus permitting the sharing of electronic records and other computing resources by all users having access to the network.
- Locator report** A monthly inventory of copier equipment, including make, model, serial number, location, monthly volume, volume by user.
- Magnetic disk** A platter-shaped device used for the storage of electronic records in computer systems; generally used in high performance computing environments requiring very rapid, on-line access to electronic records. A direct access storage device.
- Magnetic ink character recognition (MICR)** Specially shaped numbers are printed in horizontal bands on checks with magnetic ink containing iron oxide. MICR can be used as computer input or to facilitate sorting.
- Magnetic media** A general term which refers to a variety of devices on which computer-based records are stored. These media are constructed with a ferromagnetic recording material on which the electronic records reside. The most common electronic media are magnetic disks, diskettes, and magnetic tapes.
- Magnetic tape** A strip of plastic film coated with a magnetic recording material and wound onto reels of various sizes; used for the off-line storage of electronic records in computer systems.
- Magneto optical disk** A re-writable optical disk (MO)
- Mail** Letters, postcards, electronically transmitted messages, documents, publications directives, forms, packages, or any other written communication received for distribution or dispatch.
- Mail center** Location where mail operations take place
- Mailgram** Electronic message service of Western

- Union which provides next-day delivery in the United States.
- Mail handling** The process of getting the written word from one point to another.
- Mail manual** A manual that gives specific instructions in all phases of handling both incoming and outgoing mail.
- Mail operations** A series of tasks performed by action officers, mail room personnel, secretaries, clerks, and others in moving an organization's written communications.
- Mail robot** An unmanned, self-propelled vehicle that follows an invisible guideway to move from office to office.
- Mail supervision** Activities that ensure that the written word is moved from the point of origin to its destination in a manner that meets stated organizational goals.
- Mainframe** The central processing unit of the largest size computer system or a large centralized host computer used on a corporate-wide basis.
- Majors** Divisions that represent the major functional areas of an organization.
- Manual** A published control device under which an organization or a group within an organization functions.
- Manuscript repository** An archival facility established for the purpose of preserving collections of historically valuable records, usually from sources other than the organization which operates the repository. University archives that preserve archival records covering many fields of study and which were created by many disparate organizations and individuals are a prime example of manuscript repositories.
- Mapping** The process of programming each data field of an electronic form to control the efficient fill-in of variable data by assigning definitions, formulas, and restrictions to these data fields.
- Microcomputer** The smallest computer size; usually synonymous with *personal computer*, or PC. This class of computers includes desktop and portable units, referred to as *notebook* and *subnotebook* microcomputers.
- Microfiche** A sheet of microfilm containing multiple microimages in a grid pattern, usually 4 x 6 inches in size.
- Microfilm** Photographic film, with specially designed emulsion, used primarily to photograph documents and other information material. The term is also used as a verb to describe the process of microfilming.
- Microfilm image transmission** An automated system that robotically retrieves cartridges of microfilm, locates requested image or images, raster scans the image, and transmits it over the telecommunications system to the requestor who reads the documents on a display monitor.
- Microfilm jacket** A unitized microform similar to the microfiche in appearance and function, constructed of two clear sheets of polyester acetate material, a header strip, and sealed on the edges and at 16mm intervals forming channels for strips of microfilm.
- Microform** A term describing the format in which microfilm may be utilized, such as a reel, cartridge, microfiche, film jacket, or aperture card. A generic term for any form, either film, paper, or plastic, that contains microimages.
- Micrographics** The art of producing or reproducing information in miniature form.
- Microimaging** The process of imaging documents onto microfilm. A synonym for microfilming.
- Microprocessor** A term for the central processing unit of a computer, particularly those installed in microcomputers or PC's.
- Microsoft disk-operating system (MS-DOS)** An operating software system developed and marketed by Microsoft Corporation which controls the basic operating functions of IBM and compatible microcomputers or PC's. These basic functions include the electronic signals between the computer and various applications software programs, such as word processors and spreadsheets.
- Middle-digit filing** A system in which predetermined or consecutively assigned numbers of units (or documents) are divided into groups of two digits, with placement made into the major section of the file according to the middle digits of the identifying numbers.
- Minicomputer** A computer of medium size and capacity.
- Mobile aisle file** Movable sets of file shelves. They are moved, either manually or by motor on a carriage that is either imbedded in the floor or contained within a special platform.
- Model** A representation of a subject of inquiry, used frequently in systems analysis to evaluate alternatives.
- Monitor** An electronic image display device, consist-

- ing of a cathode ray tube (CRT) and various internal electronic boards and controllers.
- Multifunction device** A device that combines laser printing, facsimile, digital scanning and photocopying.
- Narrative style** A detailing of events in prose form.
- Near-line storage** The storage of optical disks or other computer media in a jukebox or other retrieval device which provides rapid, unattended access to the electronic records resident on the media.
- Neutral** Having a pH of 7.0. Neither an acid nor an alkaline substance.
- Non-perforated microfilm** Microfilm that does not have sprocket holes on each edge.
- Nonrecords** Extra copies of documents kept solely for convenience of reference. In government usage, records not usually included within the scope of the official records of an agency or governmental organization.
- Non-recurring costs** One-time costs, such as purchase price, transportation costs, and installation charges.
- Non-removable media** Magnetic or optical disk storage devices which are "fixed" within the disk drives which are used to record the information residing on them. These media provide very rapid, on-line processing and retrieval of electronic records.
- Numeric filing** Arrangement of records in ascending order or sequence (i.e., 1, 2, 3, 4, 5, and so forth).
- Numeric history file** A form control file consisting of copies of each form used by the organization, placed in a visible file in numerical order.
- Obstruction of justice** A deliberate and malicious act to interfere with a government investigation or judicial proceeding.
- Office landscaping** The arrangement of production units within an open area separated by equipment or other dividers, based on the needs of work flows, traffic patterns, and communication networks.
- Off-line information** Information stored on media located apart from the computer device on which it will be retrieved and processed.
- Offset** A process or the equipment used for high-volume duplication of copies from a specially prepared master.
- Off-site protection** The protection of vital records by storage of the original or a copy of the records in a facility remote from the organization's place of business.
- On-line help screens** In electronic recordkeeping systems, operating procedures that can be accessed on-line while using the system, so that the user does not have to refer to a user manual.
- On-line information** Information stored on media housed on magnetic or optical disk drives within a computer system, thus permitting very rapid access and continuous processing.
- On-site protection** The protection of vital records which are maintained in facilities and equipment located on the organization's premises, at or near the point of creation or use of the records.
- Open shelf filing** Storage of records on open shelves rather than in closed drawers.
- Operating procedures manual** A manual that deals with the internal policies, organization, and processes of one department or function of an organization. Such a manual can emphasize the performance of individual tasks and jobs, departmental practices, or general practices in a specific field.
- Operational value** In records appraisal, the usefulness of a record in the conduct of an organization's business; the value of a record for the purpose for which it was created. Also referred to as *administrative value*.
- Optical character reader (OCR)** A machine for reading a bar code that is displayed on the mail representing the zip code for that address.
- Optical character recognition (OCR)** A method of entering data into a computer by using an optical scanning device to read the contents of documents.
- Optical character recognition server (OCR)** A server that processes all OCR (Optical Character Recognition) functions on an Electronic Imaging Network.
- Optical disk** A platter-shaped device for the storage of very large quantities of electronic documents and data in computer systems. Optical media utilize high concentrations of laser light as the method of recording the information on the disk platters. In records management applications, optical disks are typically utilized for the storage of high volumes of electronic documents and data requiring very rapid on-line or near-line retrieval. Optical disks are available in erasable and non-erasable formats. Initially called an Optical Digital Disk, but now most frequently referred to simply as an Optical Disk.

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- Optical or object (image) server** A server that directs all functions of the jukebox, on an electronic imaging network.
- Order of entry** First unit to be considered in filing.
- Organizational manual** A publication that identifies the executive structure of an organization, unit, or department.
- Original order** A principle of archival arrangement that holds that archival materials should be arranged in the order and sequence in which they were maintained when they were in current use in the office that created them, rather than in accordance with some arbitrary scheme, provided their original order is sufficient to permit easy access and use.
- Occupational Safety and Health Administration (OSHA)** A federal agency supervising health and safety of workers.
- Out-guide** A guide to indicate what material has been taken from the file and by whom.
- Outsourcing** The practice of a business contracting or buying support services, supplies, or parts from outside sources rather than performing the services or manufacturing the parts themselves within their own organization and with their own employees.
- Owner** The originating office of a record that has been transferred to a records center.
- Packing density** The amount of data or images that can be recorded in a given area of a medium. See also *areal density*.
- Password protection** A method of providing security for computer-based records against unauthorized access using special codes or "passwords" assigned to designated users to permit them access to the records.
- Pegboard forms** The pegboard has a row of pegs affixed down the side of the board. The objective is to hold two or more forms in perfect alignment (registration), and to provide duplicate copies in one writing operation.
- Pen plotters** Fiber tip, felt tip, or ballpoint pens used for printing engineering and drafting applications.
- Permanence** The characteristic of a material that makes it able to last. See also *chemical stability*, *archivally sound*.
- Permanent records** Those records having sufficient historical or other value to warrant permanent or continued preservation beyond the time they are needed for administrative, legal or fiscal purposes.
- Records considered so valuable or unique in documenting the history of an organization that they are preserved permanently in an archive.
- Personal copier** Desktop copier that produces up to 10 copies per minute. It is usually used to produce fewer than 400 copies per month.
- pH** In chemistry, a measure of the acidity or alkalinity of a solution. The measure is compared to a scale from 0 to 14 with 7.0 being the neutral point. Acids fall in the range below 7.0 and alkaline substances fall above 7.0.
- Phonetic index** Keywords (subject and name type data) are converted by the computer into a phonetic code to minimize both computer storage requirements and the occurrence of sorting errors due to spelling and terminology ambiguities.
- Phonetic systems** File arrangements based on a numerical code that represents certain key letter sounds in the alphabet.
- Phrase searching** In electronic recordkeeping systems, the ability to search two or more consecutive words within certain or all data fields of a computer database, thereby providing more precise retrieval of required data.
- Pixels** A word meaning "picture elements," or more frequently "bits" or "dots." The smallest segment of a document that can be digitized.
- Planetary camera** A type of microfilm camera in which the film and document remain stationary during filming and the lighting is from an overhead source. Sometimes referred to as an overhead (lighted) or flatbed camera.
- Playscript format** A format that defines procedures by identifying workers and the required action of each.
- Polarity, microfilm** The characteristic in a film image that is either "positive" or "negative," that is, sign reversing. A negative image is the opposite of the original and a positive is the same as the original.
- Policy** Broad guidelines for operating an organization. A basic guide to action that prescribes the boundaries within which activities are to take place.
- Policy manual** A publication that states the course of action to be followed by an organization, unit, or department in conducting its activities.
- Polyester** A strong, colorless, transparent plastic (polyethylene terephthalate). Commonly used in preservation and to make covers, folders, and so on. Commonly used in *encapsulation*.
- Polyethylene** A flexible plastic used to make covers for

- photographic materials and other items. It can be transparent or translucent.
- Polypropylene** A hard plastic used in making stiff holders or containers.
- Polyvinyl acetate** A colorless transparent plastic solid used in adhesives. Abbreviated as PVA. Some PVA adhesives are commonly used in preservation.
- Polyvinyl chloride (PVC)** A fairly unstable plastic abbreviated PVC. Generally considered unsuitable for use in preservation.
- Precise retrieval** The ability of a recordkeeping system to consistently deliver to its users exactly the records and information they request—no more and no less.
- Preface** Includes the organization's definition, purpose of the manual, purpose of the program, advantages to be derived from the proper use of the manual, and a request for suggestions for improving the manual.
- Pressboard** A tough paper board with a high glaze on it for strength and stiffness. Used in notebook covers.
- Primary categories** Primary-level headings, the most important categories within each major heading (function).
- Primary value** In records appraisal, the value of information contained in records in support of the purpose(s) for which the records were created.
- Printer** Device used to print electronic images or data, which may be displayed on the monitor screen, onto paper using various technologies, such as ink-jet, bubble-jet, or dot matrix.
- Printing on demand** Information is available in computer files that can be shared by any number of users.
- Print server** A server that controls all print functions on an imaging network.
- Priority mail** First-class mail weighing 11 ounces or more.
- Private archives** An archival repository containing the records of private businesses, associations, institutions, or other organizations adjudged worthy of permanent preservation as archival materials.
- Procedures** A group of methods, consisting of all the steps that are taken to record, analyze, transmit, and store information needed to serve a single, specific purpose. Procedures usually provide detailed instructions of how policy is to be carried out.
- Procedures audit** An examination of all standard procedures used to accomplish standardized tasks.
- Procedures manual** A source of instruction and reference for the personnel responsible for creating, preparing, processing, storing, and disposing of records.
- Processing** The various procedures and chemicals required to develop the latent image on the emulsion of microfilm. Film developing.
- Processing area** The area set aside for accessioning, interfiling, or refiling.
- Productivity** The value of measurable output compared to the value of input.
- Provenance** A principle of arrangement of archival records that holds that archival materials should be arranged in groups that correspond to their source or office of creation, and that they should not be intermingled with records created by other offices or sources of creation.
- Public archives** An archival repository containing the records of agencies of government adjudged worthy of permanent preservation as archival materials.
- Public data network** A network that offers third-party access to large databases and serves as a clearinghouse for electronic messages of subscribers.
- Random access memory (RAM)** Computer memory used to process and store data that can be rapidly accessed directly rather than sequentially.
- Random filing** A process of storing documents as they are created in random or nonsequential order.
- Range searching** In electronic recordkeeping systems, the ability to limit the scope of a search of numeric, date and other fields by using range symbols, such as *greater than* or *less than* to provide more precise retrieval of required data.
- Reader-printer** A microimage projection device which optically enlarges and displays the image on a screen and which also prints a copy of that image on paper, using office copier technology.
- Reading file** An extra copy file of outgoing correspondence, usually arranged chronologically. Also call a *day file*.
- Read-only memory (ROM)** A solid-state memory for programs that is inflexible and unalterable.
- Reciprocating file** A power file where the whole file remains intact and one shelf takes the place of another in front of the worker, and rotates as in a Ferris wheel.

- Record** Recorded information, regardless of medium or characteristics. Any paper, book, microfilm, card, magnetic tape, disk, map, or any copy or printout that has been created or received by an organization and has been used by that organization or its successors as evidence of its activities or because of the information contained. In databases in electronic recordkeeping systems, a collection of related data fields.
- Record copy** The copy of a record or document that is placed on file as the official copy and therefore provides evidence of the organization's official position on a matter. In governmental organizations, a record having the legally recognized and judicially enforceable quality of establishing some fact.
- Recordkeeping requirements** Statements in statutes and regulations which require a regulated party to maintain certain records for some period of time.
- Records analyst** Specialist in the analysis and evaluation of systems and procedures involved in the creation, processing, and storing of records.
- Records appraisal** The analyses of records with the objective of establishing retention policy.
- Records center** An area in a building or a separate building for storing inactive records.
- Records Disposal Act of 1943** A law enacted by the United States Congress which, for the first time in U. S. history, legally authorized the records retention schedule as a means of disposing of records of agencies of the federal government.
- Records disposition** The process of elimination or destruction of records, usually under a records retention program.
- Records inventory** An identification, description, and quantification of all of the records possessed by an organization.
- Records management** A professional discipline that is primarily concerned with the management of document-based information systems. The application of systematic and scientific controls to recorded information required in the operation of an organization's business. The systematic control of all organizational records during the various stages of their life cycle: from their creation or receipt, through their processing, distribution, maintenance and use, to their ultimate disposition. The purpose of records management is to promote economies and efficiencies in recordkeeping, to assure that useless records are systematically destroyed while valuable information is protected and maintained in a manner that facilitates its access and use.
- Records management manual** A publication that defines the scope of the records management program, its authority, the services it provides, and an introduction to the concepts to enhance its understanding and acceptance.
- Records manager** The individual within an organization who is assigned the responsibility of systematically managing the recorded information generated and received by the organization in accordance with accepted records management principles and practices.
- Records recovery plan** A plan for restoring damaged vital records to a useable condition following a disaster. Usually a part of a comprehensive vital records protection or disaster recovery plan.
- Records retention** The act of maintaining or holding records for future use, often under policies and procedures of a formally established records retention program.
- Records retention and disposition manual** A manual that includes information about controlling designated records and information so that the organization will be in compliance with government requirements.
- Records retention program** The component of a records and information management program which provides policies and procedures specifying the length of time that an organization's records must be retained. The program provides for the systematic destruction of records that no longer serve any useful purpose, and is implemented by effecting the destruction of records on a scheduled basis, as specified in the organization's records retention schedule. The retention program is one of the organization's major tools for controlling the growth of its records, and it also minimizes the legal risks that can be associated with maintaining and destroying business records.
- Records series** A group of identical or related records that are normally used and filed as a unit and which permits evaluation as a unit for retention scheduling purposes.
- Recurring costs** Items such as supplies, power, insurance, taxes, and direct labor.
- Recurring data chart.** A chart showing items common to all forms in the group; common to some, but not to all; and found only on one form in the group.

- Reduction ratio** The ratio of the size of an original document to its size on filing.
- Reference copy** A copy of a record used primarily for information purposes. The term is often used to denote records consisting of duplicate rather than official copies of documents.
- Reference time** Length of time taken to examine the document or file.
- Refile** The process of returning a record to its original place in a file after it has been withdrawn.
- Register** In archives management, a type of finding aid used to describe manuscript collections and other archival records in a manner that facilitates their retrieval and use.
- Registered mail** A mail service providing tight security from the point of mailing to the delivery of office.
- Relational database** A database design that allows direct relationships between any two data elements.
- Relative index** A dictionary-like listing of all possible words and combinations by which material may be requested. Satisfactory performance reliability of equipment can be measured by the number of copies between service calls (CBSC) and service-call frequency (SCF).
- Remote diagnostics** A device that informs a host computer that some sort of part or supply failure will occur in the copier.
- Remote encoder** A device that allows any and all mail to be bar-coded and processed mechanically.
- Remote storage** Off-site storage of records in company-owned, commercial, or cooperative records centers.
- Removable media** Magnetic or optical storage devices which may be removed from and stored apart from the disk drives on which they are recorded and read.
- Reports manual** Provides writers of reports with standard practices and instructions in a form that is convenient and easy to use.
- Reprography** Facsimile reproduction of graphic material.
- Requirements analysis** An analysis of an organization's recordkeeping systems to determine whether and where records management automation is needed, the type of automation required, and other elements that are relevant to the process of applying various forms of computer automation to solve recordkeeping problems. Sometimes called a *needs analysis*.
- Resolution, EIM** A mathematical indication of a planned readability factor, such as "x" dots per inch, with 200 dots per inch (dpi) considered adequate. Image sharpness.
- Resolution, microfilm** A measure of the sharpness of the image, expressed in lines per millimeter, using a resolution test target as a standard.
- Retention period** The period of time during which records must be retained in a certain location or form because they are needed for operational, legal, fiscal, historical, or other purposes. A retention period may be stated in terms of months or years, and is sometimes expressed as contingent upon the occurrence of an event.
- Retention schedule** A document prepared as a part of a records retention program that lists the types of records maintained by each department of an organization, and specifies a period of time after which destruction is authorized as a matter of policy. The retention schedule also identifies the organization's archival records and mandates their permanent retention, and it may provide for the transfer of semi-active or inactive records from prime office space to a records center or other facility for continuing retention. Also called *retention and disposition schedule*.
- Retrieval** The process of locating and withdrawing a document from a collection of records.
- Retrieval system** A method or index used to locate and withdraw a record from a given group of records.
- Retrieval time** Time spent retrieving documents is divided by the total number of records retrieved for one month.
- Reversibility** The quality of being able to be undone or reversed back to its original state without any harm to the object. Used in some preservation.
- Risk assessment** In vital records protection and disaster recovery planning, the process of determining the risks to which an organization may be exposed in the event of loss of some or all its vital records, and whether it would be in the organization's best interest to take certain measures to reduce these risks to a level that is considered to be acceptable.
- Rotary camera** A microfilm camera that photographs moving documents.
- Sampling test** Test made to determine the scan speeds and image quality, using random samples of documents and random timings.

**Scanner** A device used in electronic imaging, that raster scans a document to record the image on an optical disk or tape, using binary code.

**Scan/workstation server** A server that processes all scanning and workstation activities.

**Screening** The elimination of material before it is filed.

**Search** The act of locating and/or withdrawing a record from a group or collection of files. In electronic filing, examination of a series of items for those that have desired properties.

**Secondary categories** Subdivisions of primary headings.

**Secondary value** In records appraisal, the value of information contained in records which reflects the actual or potential uses to which the information may be put for purposes other than the purpose for which it was created.

**Second-class mail** A mail service available only to publishers and registered news agents.

**Server** A computer on an electronic image network designed to serve a specific need.

**Service report** A service history of all equipment.

**Sizing** A substance added to paper to hold fibers together and to make it less absorbent so that inks will not bleed.

**Slant file** The file module is shaped like a parallelogram and is a variation of the traditional mobile aisle shelving system.

**Software, applications** Computer programs designed to process data and perform functions and applications required by end users, as opposed to software designed to operate the computer's basic functions. In PC computing, word processing and spreadsheet software programs are common types of applications software.

**Software, document management** In large, multi-user network computing environments, a family of packaged software products designed to facilitate the management of documents and files stored in the PC's and file servers connected to the local or wide area network.

**Software, files management** In PC-based electronic recordkeeping systems, a family of packaged software products designed to facilitate the management of the documents and files resident on the system.

**Software, records management** A general term which refers to a family of packaged software products designed to provide computer enhancement over a

wide variety of records management functions; the major functional applications include indexing, tracking and monitoring file folders in active recordkeeping systems and storage cartons containing inactive records in records center environments.

**Solid board** A paper board made of one material only. Board made of two or more types of fiber in layers is called *combination board*.

**Sorting** Process of arranging records in the order in which they will eventually be filed.

**Soundex** A phonetic file arrangement based on a numerical code that represents certain key letters and consonant sounds in the alphabet.

**Space planning** Coordination of the physical components to provide maximum efficiency within the available floor space in the most attractive arrangement.

**Special delivery** A mail service that provides delivery beyond normal delivery hours and on Sundays and holidays.

**Specialty forms** Includes various types of forms, such as pegboard forms, bank checks, or office supplies, such as tags, labels, mailers, and envelopes.

**Spirit process** A process that uses alcohol as a solvent to transfer images from a carbon master. Also called "ditto," "liquid," or "fluid" process.

**Stack area** That portion of a records center or archive that contains the records holdings.

**Staging area** An area used for intermediate or temporary storage of records awaiting accessioning or disposal processing.

**Standalone system** A computer system that contains its own processing and memory units so that it can operate independently of other computers.

**Standard** A rule or principle established to measure quality or value.

**Standard operating procedure (SOP)** Instructions for the performance of individual tasks and jobs.

**Statutes of limitations** Laws containing provisions specifying the period of time during which a party can sue or be sued on a matter. Records are often considered to possess varying degrees of legal value during this time period, and decisions to retain them are often based on this value. Also referred to as *limitations of action*.

**Straight numeric filing** A system in which consecutively numbered folders are placed in a file in exact sequential order.

**Strategic plan** A plan that impacts directly on the

- success of the organization's primary purpose or goal. A plan that affects substantive rather than facilitative activities.
- Subdirectory** A method of organizing and managing PC-based electronic records into logical subgroups under each directory, in cases where the file contents and structure of the directory become too large or cumbersome for effective processing and retrieval.
- Subpoena duces tecum** A court order requiring a witness to appear in court, produce relevant records, or provide testimony.
- Supersession notice** A notice that shows dates of revision, consolidation, or elimination.
- Suspense file** A file organized chronologically in which documents or data are entered or filed by a future date of recall.
- Synthetical index** An index that brings together like items or concepts, as in a coordinate indexing system or keyword subject index.
- System** An array of components that interact to achieve some objective through a network of procedures that were integrated and designed to carry out an activity.
- System conversion** The tasks associated with implementing a new or upgraded recordkeeping system by conversion of the existing records to the new system's format and structure. The term applies to both manual and computerized recordkeeping systems.
- Tab** A projection above the guide or folder body upon which the caption appears.
- Tabbing** The process of applying small adhesive pieces of paper (tabs) to keep the ends of folded mail pieces together.
- Tape rotation backup system** A method of protecting vital computer-based records by periodically storing copies of magnetic tapes containing the updated vital data in a secure facility remote from an organization's computer processing facility.
- Targets and certifications** Sheets of paper which are microfilmed together with documents to serve as index points or to make the certification a part of the microimages.
- Teleconferencing** A form of communication that permits people at different locations to conduct meetings together and includes computer conferencing and videoconferencing.
- Template electronic forms** Forms for which only the variable information needs to be keyed into a form template or blank form, and a hard copy can be made of the entire record.
- Terminal-digit filing** A system of filing in which the numbers are read, right to left, in groups of two, three, or four digits, or in combinations of two and three digits.
- Tertiary heading** Subdivision of secondary heading.
- Text files** A collection of computer-based electronic records typically consisting of character-coded alpha-numeric and graphic symbols commonly encountered in typewritten documents. Text files may be created by word processing software programs, electronic messaging programs, or other computer software.
- Thesaurus** In electronic recordkeeping systems, a display of the content and structure of indexing terminology; a listing of document indexing terms designed to provide consistency in identifying documents and files so that the records can be effectively retrieved.
- Third-class mail** A mail service for bulk business mail or advertising mail weighing less than 16 ounces.
- Tickler** A memory aid; a file set up as a reminder to "tickle" the memory.
- Timely retrieval** The ability of a recordkeeping system to consistently deliver to its users the records and information they request within time frames sufficient to enable them to perform their work in a productive manner.
- Toner** Colored (usually black) carbon-like substance used to form images in copiers and printers.
- Topical filing** A system in which one file follows another in alphabetical order. Also known as a *dictionary* system.
- Transaction set** The grouping of data elements needed to provide information in the document.
- Transfer list** A list of the contents of a group of records that are being transferred from one holding to another, usually from active files to a records center.
- Trustworthiness** The degree to which records containing evidence introduced or proposed for introduction in legal proceedings may be relied upon as being factual or otherwise what they purport to be.
- Turnaround ratio** Average time it takes to retrieve a document and get it to the requester divided by the total number of requests.
- Turnkey** A sale of equipment or a system that provides for installation that is ready to use by the buyer with no further action required, except for "turning the key."

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- Ultraviolet (UV) filter** Any material that filters out UV ultraviolet rays. Such rays are harmful to preserved materials. Some exhibition spaces use UV filters on the windows and over fluorescent lights.
- Uniform file classification** A classification system that preserves the set order of records and establishes common titles.
- Uniform Photographic Copies of Business and Public Records as Evidence Act** A United States federal statute (adopted by many of the U. S. states) which holds that duplicate copies of documents are considered to have the same legal status as the original documents from which they were reproduced, provided the duplicates are accurate reproductions of the original documents.
- Unitized microform** A microform that is used to display a single frame of film, such as an aperture card, or a group of related images in a jacket, thus unitizing (uniting) an image or group of images that are related.
- User** A patron of records center services or computers. (See also **customer**.)
- User-defined reports** In electronic recordkeeping systems, the ability of the user to create system-generated reports that are customized to meet specific needs. This capability is sometimes provided in applications software programs.
- Vacuum drying** A general term which refers to several methods (freeze drying, thermal vacuum freeze drying, vacuum drying) for removing water from wet paper records by placing them in an airless chamber which vaporizes the water, which is then expelled from the chamber as steam, leaving the records dry.
- Vault** A fire-resistive and highly secure enclosure constructed within an office building or other workplace and used for the protection of large quantities of vital records. Vaults are designed to provide a high level of protection against fire and other hazards and are usually designed to be structurally independent from the building in which they are located.
- Vaulting, electronic** A method of protecting vital computer-based records by periodically transmitting updated data to a remote computer or tape drive. The transmission occurs in an on-line, electronic mode over telecommunications links.
- Video conferencing** A type of telecommunication. It is a variation of computer conferencing with cameras so that participants are visible to each other and the conference is on videotape.
- Videodisc** A laser disk which records and plays motion pictures.
- Vinyl** A group of plastics generally considered inappropriate for use in preservation. Often refers to *polyvinyl chloride (PVC)*.
- Virus, computer** A computer program that is capable of inserting a copy of itself into another computer program, thereby corrupting the integrity of the data in the program.
- Visible file** Arrangement of strips, cards, or other documents in specially designed equipment so that one line of each record is visible to serve as an index.
- Vital records** Records containing information required to re-establish or continue an organization in the event of a disaster; records containing unique and irreplaceable information necessary to recreate an organization's legal and financial position and preserve the rights of the organization and its employees, customers, shareholders and other constituent groups. Vital records include records whose informational value to the organization is so great, and the consequences of loss are so severe, that special protection is justified in order to reduce the risk of loss.
- Vital records center** A commercial or user-owned facility dedicated to the storage and protection of vital records. The facility is usually equipped with special fire detection, suppression and other security systems, and is generally located remote from the organization's primary place of business.
- Vital records manual** Includes procedures of the vital records protection program, explains the vital records master list, and provides instructions for reconstructing vital records in the event of a disaster.
- Vital records master list** A document that provides each department with a listing of all vital records for which it is responsible.
- Vital records program** That component of a records and information management program that manages the protection of vital records from loss or damage.
- Voice mail** A message that is digitized and can be reconstructed in audio or visual format.
- Wheel file** Usually an upright file which rotates like a Ferris wheel and holds cards.

**Wild-card searching** In electronic recordkeeping systems, the ability to use wild card symbols to represent multiple prefixes or suffixes of words (e.g. *automate, automation*), or alternate word spellings (e.g. *labor, labour*), thereby providing more precise retrieval of required data.

**Workflow program** A multi-step procedure of processing documents or completing transactions, where a document flows from station to station.

**WORM** A type of optical disk that permits recording only once while having the capability of being

read many times. An Acronym meaning "Write Once, Read Many".

**X-Y grid** A coordinate used to locate a specific area on a plane or map. X representing the vertical columns and Y representing the Horizontal Rows.

**ZIP code** A five-digit number designed to expedite mail delivery in the United States

**ZIP code + 4** A nine-digit number that identifies a geographic segment within the 5-digit area, such as city block, an office building, or a high-volume mailer.

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