# *Management Techniques and Technical Resources in the Archives of the 1980s*

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### *Introduction*

The principal challenge facing archives in the 1980s involves finding ways of dealing with a growing and more complex body of archival records at a time of economic restraint. Archivists must find innovative ways of doing more without additional resources. This challenge approaches archives from at least six directions:

i) Archives by nature are not static. They grow as time passes. Phenomenal growth has been experienced in recent years by archives which preserve the huge volume of records created by government. The task of scheduling, selecting, describing, and conserving these records presents a formidable challenge to government archivists.

ii) In addition to the now greater volume of government records, the modern archivist must work with records created in such diverse new fields as science and technology, social programmes, and industrial development. Archivists have not by tradition had training and experience in these areas. The complexity of the archival record has therefore produced another challenge for modern archives.

iii) Archivists no longer deal primarily with paper files. They must now contend with machine-readable records, photographs, motion pictures, and television broadcasts, architectural and cartographic records, and a wide variety of other media. Each one requires special knowledge, skills, procedures, and storage facilities. The need to acquire and conserve this variety of material places new demands on archivists to develop appropriate selection criteria, descriptive standards, and, perhaps above all, conservation programmes.

iv) Archives in many countries face an increasing demand for access to archival holdings. While the familiar academic researchers continue to use archival records, archives are now used by journalists, social scientists, writers, filmmakers, teachers, and others who have a variety of research needs and often serious time constraints. If, for example, journalists are looking for information for a topical news story, they must have it today and not next week, or even tomorrow.

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v) Many government archives must provide access to their material in accordance with freedom of information legislation which grants the right to access to information usually within strictly prescribed time limits. This, too, places new demands on contemporary archives.

vi) Most administrators of archives work in large bureaucratic structures which require them to devote most of their time to programme management. Many find they cannot devote much time to actual archival duties. Solutions to archival problems in the 1980s, however, can only be implemented by administrators who understand archival work. As American Professor of Management, James Worthy, notes, "This may seem rather obvious, but there is a widespread notion that management is management, and that if you know how to manage one thing you can manage almost anything. There is a germ of a truth here but not much more than a germ." Worthy goes on to say:

> The first and most important qualification for the successful archival administrator is a firm grasp of archival functions and procedures. No amount of knowledge of human relations or principles of organization or techniques of planning will be of much avail unless the would-be administrator knows what archives are supposed to accomplish and how they function. These things, of course, can be learned; my point is that they *must* be learned, and here the experienced archivist is a far better guide than the most sophisticated management theorist.[1]

A good archival administrator recognizes that scholarly study of archival records, theory, and practice is the intellectual foundation of efficient, economical, and innovative archival management. This paper, however, concentrates on two other major solutions to the problems of modern archives — modern management techniques and technological advances in the areas of conservation and electronic data processing.

## MANAGEMENT TECHNIQUES IN ARCHIVES

It is natural to assume that most problems faced by archives can be resolved by additional human and financial resources. But before seeking new resources archives must make the best use of the resources they already have simply because employers must be convinced that archivists are good administrators. It is difficult in the best of times to convince administrators and government officials that resources should be spent on cultural activities. It is doubly difficult to do so if they know, or even suspect, that archivists are not managing effectively resources they now have. The manager of an archival programme has to be recognized as an effective manager — especially when the time comes to appeal for additional resources.

Basic management techniques have been developed and tested in large organizations and archivists have much to learn from this experience. An archivist in a managerial capacity has an obligation to make use of good management practices at a level of sophistication appropriate to the needs of his organization. Those currently managing most archives have come to their positions with academic training and interests. For most, scholarship in the historical or archival professions has been an important element

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1 James Worthy, "Management Concepts and Archival Administration," in Maygene F. Daniels and Timothy Walch, eds., *A Modern Archives Reader: Basic Readings on Archival Theory and Practice* (Washington, D.C., 1984) pp. 302-3.

in their formation. Very few have a background in organizational management. They become managers of large institutional programmes often without the benefit of sound management training. It is not necessary, however, for them to have a graduate degree in business administration, since the essentials of management can be learned in other ways. Basic textbooks on management subjects are plentiful and formal courses are always available at universities or other educational institutions. Many archives offer specialized courses in various aspects of institutional management. Archival administrators can learn from colleagues in other institutions and other disciplines who have knowledge of sound management techniques.

There are seven important elements in the management of a cultural organization:

### *i) Mandate Statement*

An archives must have a precise, formal, approved statement of its mandate. A mandate statement should contain those general responsibilities of the institution set out in the legislative or other authority which established the institution. It is of critical importance that this statement be approved by the individual, board, or office to which the institution is responsible and that the statement be reviewed periodically to insure that it remains valid. Without a clear mandate statement, an archives cannot function consistently over an extended time. Pressure will constantly be brought to bear on the organization to take on responsibilities which may not have been intended when it was established. If the archives staff is to have a sense of direction and an understanding of its principal function, an approved, current mandate statement is essential.

An institutional archives should have, as part of its mandate statement, a clear indication of its role in the management of the institution's active and semi-active records. Does the archives control scheduling and destruction of the records? Is the archives simply a passive recipient of material which someone else determines to be of archival value? Since these are critical questions in determining the role of the archives within an organization, the archival administrator must have an unequivocal statement of his responsibilities in this area. The mandate statement of the archives should leave no doubt about the extent of the archives responsibility and staff members must know the breadth of its authority. Without a clear mandate statement the archivist will encounter constant frustration in the management of his programme.

### *ii) Objectives, Policies, and Standards*

Once a clear mandate statement has been established, it is important to state clearly the objectives which flow from that mandate. Every organization should have a statement of both its long-range objectives and short-range goals which give practical application to the institution's mandate. With statements of this kind in place the manager not only knows in general terms what the organization is trying to achieve, but at certain designated places along the way he can stop to measure progress toward those objectives.

In the setting of objectives, it is important to keep in mind two considerations. First, it is essential to distinguish between what can be achieved in the short term and what must be left for accomplishment in the long term. Secondly, one must set realistic goals. They must be achievable and the timetable for their achievement must be realistic. As part of the process of clarifying objectives, an archives should have on record a few basic statements of policy relating to its work. In the areas of acquisition, service to the public,

and publication, it is highly useful to have written statements of policy. Such statements can aid in providing a framework for planning and goal setting and they can act as a touchstone in making decisions on the initiation of major projects.

In addition to the process of objective setting, it is advisable to develop statements of basic standards which staff members can use as guides and which can be referred to when explaining practices and work-load levels to people outside the institution. The archives must be able to instruct staff members about standards which the institution wants to see applied in appraisal and selection of material for acquisition. Certainly there is an area in the process of selection in which the individual must exercise professional judgment, but it is ridiculous to suggest that the entire evaluation and selection process is a subjective one. The institution must establish a general framework within which professional judgment is exercised. Similarly, standards of description must be set by the institution if there is to be uniformity in the level to which archival collections are described. These levels of description range from a paragraph to describe a records series of one hundred metres, to a detailed calendar providing a document-by-document précis of each item in a collection. Naturally the institution must have some standard established to indicate to staff what levels of description are desirable and affordable and to document for those outside the institution that resources are being used in a reasonable manner to achieve reasonable standards.

### *iii) Action Plan*

Once the general objectives of the institution are known and in what order of priority they should be pursued, the institution must develop an action plan outlining the specific goals to be achieved, the acceptable time limitations, and the areas or individuals responsible for achieving the objectives. A work plan may be elaborate or simple depending on the size of the organization and the complexity of its tasks. It is important, however, that an action plan exist and that actions be carefully designed to achieve the objectives of the organization. Once the action plan is in place, it should be communicated to the staff and clearly understood by those responsible for carrying out specific actions. It is important that the plan be reviewed regularly throughout the year to ensure that specific activities are on schedule. The plan should be amended to reflect changing circumstances and updated on an annual basis.

A factor of critical importance in any work plan is the setting of priorities. Since cultural institutions cannot respond to all the demands made of them, it is especially important that an action plan acknowledge the need to set priorities. If we cannot do all the things which should be done or that we would like to do, we must ensure that time and other resources are devoted to those things which really must be done. A priority-setting exercise is not usually easy because there are always competing priorities, but it is clearly a responsibility of management to decide upon the relative merits of the competing factors and to establish the priority activities of the institution. Once this has been done, logical decisions on the allocation of resources can be made and, if budget cuts are imposed on the agency, a planning framework with a set of priorities should ensure that restraints are imposed in a logical manner.

Every archival institution should have a formal planning mechanism of some kind. There are various ways in which an action plan can be developed. The main point is that

there should be a planning mechanism and that work plans are developed and reviewed regularly to ensure that the work is truly directed towards achieving the broad goals of the institution.

### *iv) Budget Process*

An archives should have a predetermined budget which lays out the resources at the disposal of the manager for a particular period of time. Most organizations operate on an annual budget which is fixed in advance and which allocates resources for particular purposes. What is very often overlooked, however, is the importance of tying the budget process to the planning activity of the organization. A well-managed organization allocates resources in accordance with the action plan which management sets for it. The budgeting system must ensure that available resources are devoted to activities on which management has placed priority. Otherwise, the planning activity can be futile. The establishment of plans and priorities must be closely tied to the management of expenditures if managers are to control the product of the institution. Without a close relationship between the organizational plan and the annual budget, managers have little control over what actually is done. Without a link between policy and expenditure management, the favourite projects of individual staff members may receive higher priority than the activities planned by the managers.

### *v) Measurement Systems*

In order to determine the extent to which management's plans are being implemented and objectives achieved, the archives must have some mechanism for measuring results. The basic tenet of management is that "if it cannot be measured, it cannot be managed." The basic purpose of a measurement system is to record "inputs" (the expenditure of human and financial resources) and "outputs" of the work performed (the things that are produced by the institution). Without basic information of this kind, managers are not in a position to judge whether they are actually spending appropriate levels of their available resources on activities which have priority. The manager may have designated the organization and description of records and the production of published guides as a priority in his institution. To know whether these goals have been met, he must not only know "how much" has been produced, but also how much these results have cost in staff time and expenditures of money. By comparing these inputs and outputs with figures in other areas of activity and with figures for other years, the manager will have an objective means of measuring results achieved, degrees of change in programme activity, and the effectiveness of his planning. Performance measurement systems are not easy to develop for a cultural organization, but they are a key means of gaining credibility as a manager.

### *vi) Audit*

In the field of measurement systems it is also appropriate, particularly where large programmes and expenditures are concerned, to have audit and programme evaluation mechanisms. The manager, preoccupied with day-to-day problems, seldom has the occasion or proper degree of objectivity to determine whether programmes are appropriate, accomplishing what they are intended to do and still required, or whether their effectiveness could be improved. To ensure that questions of this kind are raised, it is necessary to have mechanisms in place to carry out those activities on predetermined schedules. In large archives, particularly within governmental organizations, audit and

programme evaluation mechanisms are an accepted part of the operational structure and serve a valuable role. For small institutions which are not, as a matter of course, subject to such reviews, it is strongly recommended that they arrange on a periodical basis for a comprehensive audit and evaluation of programmes by independent outside agents. Although the cost may be significant, such reviews could be of great benefit to the success of an archival programme, for they either provide assurance that programmes are operating efficiently and effectively or they bring to light problems requiring attention.

### *vii) Public Relations*

Another important management responsibility, one which is frequently overlooked, is public relations. It is essential that our "publics" know about our programmes and understand the importance of maintaining them even during times of economic restraint. This is obviously true of the research public which uses archival institutions; but it is especially important that we take steps to ensure that the decision makers whose choices will have an impact on our resource levels know something of our programmes and understand their value to society. Public information programmes for the user community are important because they strengthen the base of support for our work, but at the same time the manager must be sensitive to the need to maintain good "public relations" with the governing boards, administrators, and political "masters" of our institutions who ultimately make the critical decisions. If they do not understand the importance of preserving our documentary heritage, we cannot expect them to be supportive when they are asked to judge the merits of programmes which are competing for resources. The manager must keep these people well informed about the value of archival programmes so that they do not make decisions about them in ignorance.

## TECHNICAL RESOURCES IN ARCHIVES

At a time when archival institutions must take on greater responsibilities with fewer resources, modern technology offers a number of useful aids. Developments in the last two decades have provided archivists with a number of new means of preserving the valuable records in our custody. This is particularly noteworthy in the fields of electronics, microrecording, and the chemistry of paper. Professionals in the field of archival preservation must make use of the advances in these technical fields.

Although modern technology has developed important tools for us, they are often prohibitively expensive. In the field of motion picture film, technologists in the industry have developed sophisticated equipment which the archivist can use to make high quality conservation copies of badly deteriorated films. The technology developed in this area is extremely effective but the equipment involved is so expensive that very few institutions can afford to acquire it. It is therefore important that administrators of archives realize that developments in technology must be shared between institutions at the regional level and, sometimes, at the national level. And exchanges of information at the international level must prevent us from wasting our resources by duplicating experiments with new technologies in a number of places. Developments currently taking place in video disc technology illustrate the point. There is no doubt that this medium has tremendous potential in the archives. The video disc offers help with the problem of archival storage through miniaturization and as a storage medium which is highly resistant to

deterioration and degradation by the environment. The video disc is an excellent example, however, of an expensive technology which requires archivists to share knowledge to avoid costly duplication of effort.

To avoid duplication, archivists must have information networks at the regional, national, and international levels which disseminate useful information. Particularly within national boundaries archivists need to develop consortiums and other cooperative ventures to find ways of acquiring expensive equipment and developing processes that bring the benefits of technological advancements to archival problems. If cooperative solutions to some of these problems can be found, institutions may avoid spending disproportionate amounts of their resources on experimentation in specialized areas of technological development. It is essential that expenditures on technological solutions to archival problems be proportionate to the size of the institution. In order to ensure that we do not waste precious resources, individual institutions should not take on major research and development projects on their own. These experiments often end in frustration; and they discredit technical solutions, not because the technology is inappropriate, but because a single institution is often unable to bring costly and complicated technical experiments to a satisfactory conclusion. Archival networks are important to foster this kind of development and they should be supported by people working in this field.

Two areas in which technological advances are of current interest to archivists are conservation of archival materials and application of automated techniques to the control of information in archives. These complex fields have serious potential pitfalls for the archival administrator which deserve careful consideration.

### *i) Conservation*

In the area of conservation, technological advances in the past decade are practical and helpful, if not spectacular. This is particularly true of equipment for copying archival material. A variety of micrographic equipment has been developed with useful application in archives. Microfilm in a number of different formats is now widely used in archives to copy manuscripts and other paper documents, large amounts of photographs, works of art, prints, posters, and cartographic documents. Although it was once thought that micrographic reproductions of archival material would not deteriorate, it is now known that unless stored in carefully controlled conditions and produced in accordance with strict archival standards, they are subject to deterioration. Similar advances have been made in the development of equipment to duplicate motion pictures and television recordings. This equipment makes high quality duplicate copies of the media for research purposes. The duplicates can be produced economically for deposit in other archival institutions. The existence of sophisticated equipment of this kind often means that duplicate copies of films and television broadcasts can be made which are actually superior in quality to originals which have suffered significant deterioration through frequent use and poor storage conditions.

Video disc technology appears to be of particular importance at the present time in the preservation of pictorial material, machine readable records, films, television broadcasts, and cartographic documents. By using techniques of "digital-encoding" technicians can produce on the video disc extremely accurate reproductions of original documentation. In addition to holding very large quantities of material in a compact storage format, the video disc appears to be able to store archival documentation, particularly documentation in which the preservation of colour is important, in a relatively permanent medium which

is not easily subject to deterioration. Of all the current areas of technological development, the video disc is likely to have the most significant impact on archival work in the future. If archivists can find a way to develop the full potential of this new medium, it will have a major impact on a number of areas of our work and will undoubtedly cause us to question long-held beliefs about the importance of preserving large amounts of original archival material. It is certainly an area of development that will be closely watched by archivists in all parts of the world.

Important developments have been made in recent years in the restoration of archival documents on paper. Advances have been achieved in paper technology relating to the reinforcing or strengthening of paper, leaf casting techniques for repair of damaged paper, the incapsulation process for the preservation of important individual items, and deacidification of paper to inhibit its destruction by its inherent chemical decomposition. The great difficulty in this area is in adopting procedures and techniques which make a significant impact on the preservation of important material while avoiding extremely costly processes. All archival institutions have an obligation to preserve significant examples of original documentation. Recent advancements in paper repair and restoration have helped our profession to fulfil that obligation. Archival institutions, however, must strike a reasonable balance between the kind of neglect that has been all too common in the past and overly ambitious efforts on the part of individual institutions to develop solutions to problems for the community as a whole. The area of paper restoration is another area in which it is essential for archivists to share information. Documents on paper are still by far the largest part of most archival collections. Archives must use the tools which modern technology has provided to preserve paper documentation and find the means to make information relating to practical solutions to problems in this area readily available to archivists everywhere.

Useful experiments with the deacidification of large quantities of paper have been carried out in several locations including the Public Archives of Canada. We now know that an aqueous process of mass deacidification can be applied to bulk quantities of paper, particularly published material in which ink is not soluble. This technique can be applied to archival material, although a way of treating significant quantities of records has yet to be perfected. It seems highly likely, however, that a technique will be developed in the near future which will prevent the relentless deterioration of large volumes of material. The challenge then will be to find the means to make the process known as widely as possible and to make the process and the hardware affordable.

In dealing with the application of technology to the solution of conservation and restoration problems, archives must search for practical solutions which offer the best return on investment. Costly, glamorous adventures have to be avoided. Institutions whose resources are limited and which do not have a mandate for research and development should always choose the course of action which will provide the best practical solution for the least expenditure.

One of the most significant aspects of a conservation programme for archival material (and one which most institutions can control) is storage environment. Proper environmental controls in archival storage rooms prevent significant damage to documentation. Controls which provide appropriate levels of air temperature and humidity can be installed for a reasonable amount of money. Archivists have heard the view that institutions should have the capability for deacidification of paper, incapsulation of significant documents, and procedures and techniques for restoration of important

documentation. Yet it is ridiculous to devote large amounts of money and manpower to restore documents only to put them back in a storage environment which guarantees their ultimate destruction. The resources available should be spent to ensure that the storage environment is controlled to the degree that the institution can afford. Expensive restoration techniques and the use of expensive acid-free storage containers will, in the long run, do little good if the storage environment is not controlled. The return on investment achieved by expenditures on environmental controls is far greater and much longer lasting than by any other means. To spend precious resources on sophisticated techniques and procedures, while ignoring the fundamental importance of environmental controls, is irresponsible. Archives should first act to prevent damage to holdings by controlling the storage environment as carefully as possible and by preventing mechanical damage to the documents by making copies of heavily used sources available for research. After taking these precautions, an archives can consider the extent to which it should spend resources on more sophisticated repair and conservation procedures.

### *ii) Automation*

Technological advances in automated equipment and processes have been spectacular in the past decade. Miniaturization and the declining cost of equipment have put this technology within the reach of most archival institutions. This spectacular reduction in the cost of computer processes and equipment has rapidly made them part of the solution to archival problems. Automated processes can drastically reduce duplication in the production of description, control, and finding aid material. Once descriptions have been prepared, there is no need to duplicate work manually in several different formats. The great advantage of electronic data processing is that large amounts of staff time can be saved by the proper design and operation of computer-assisted systems. Control of information which the archivist must keep in relation to his holdings can be made much simpler, more versatile, and faster with the use of automation.

Archivists must be aware of the advantages of automated control and retrieval systems used by the agencies which transfer records to them. If an existing system can be adapted from an operational purpose to an archival control and retrieval purpose, there is an important economy to be achieved for the archives. The adaptation of such systems requires long-range planning and a close working relationship between the archives and the agencies creating the records.

It has been generally assumed that the great value of automation for the archivist will be in retrieval of information for the researcher. Practical applications have shown, however, that the computer is initially of value in controlling and manipulating the large volume of information which the archives must produce to document its holdings. Another benefit of this type of automated control is that systems can be added to retrieve information to make the researcher's task simpler. As it turns out, information retrieval for the researcher may be a secondary benefit of automation in archives.

A number of caveats should be stated in connection with automation of information in archival repositories. Given rapid technological change, there is the danger that systems and equipment installed in archival institutions will soon be outmoded. The archivist/manager must be prudent in selection of systems and equipment and avoid long-term commitments on the leasing of equipment. He must ensure that systems are designed to provide the greatest degree of flexibility and adaptation in the future.

The introduction of automated processes will not likely reduce the archives budget in an absolute sense. The benefits which automation offers the archivist are in the field of producing, manipulating, and controlling much larger volumes of information than it is now possible to handle by manual systems. In absolute terms the cost of processing information is not likely to decrease, but it is certain that the prudent introduction of automated techniques into archives will give the archivist a much better return on money that is spent. Because of the very large impact which the introduction of automation to archives can have, and the substantial costs involved, it is essential that the archivist proceed with great care. There are many examples in archives, libraries, and other institutions around the world to document the fact that introduction of automation without careful planning can be disastrous. Before any institution begins to automate its holdings, it should develop a long-range plan and prepare realistic cost estimates based on the best technical advice available so that the cost will be known in advance.

It is also advisable that institutions look carefully at the complexity of automated systems development. The cost of developing unique systems with specialized programmes, technical support staff, and appropriate equipment can be high. Institutions entering the field are advised to investigate systems already in place which might meet their requirements and to consider pooling the cost of systems development with other institutions. Because development costs are so high, it makes sense for institutions to cooperate to avoid costly duplication. Archival institutions require networks and information exchange systems which ensure that duplication is avoided and that systems operated by various institutions are as compatible as possible. Modern technology provides the techniques and equipment which permit institutions to exchange instantly large banks of information. Given that fact, it is of critical importance that archival institutions develop information control and retrieval systems that have as high a level of compatibility as possible. We have a responsibility to ensure that information systems developed in individual institutions permit exchanges of information with other institutions on as broad a basis as possible.

### *Conclusion*

The challenges facing archivists in the 1980s are serious. In some extreme cases they appear to threaten the very existence of individual institutions. Archives, however, have survived previous periods of difficulty and current circumstances provide support systems and sophisticated technology to help meet those challenges in a planned and premeditated fashion. Modern technology provides powerful means of making archival institutions more efficient and more productive. These tools can help us "to do more with less" if we use them wisely and avoid technological change for its own sake. Modern management science can help us devote our efforts and resources to the truly essential work of the institution; we can put systems in place which will tell with reasonable accuracy whether the resources we have are being put to the best possible use; we can establish plans and determine our top priorities in a rational manner in order to ensure that existing resources are spent on our most important tasks. We can choose between worthwhile projects on the basis of sound plans and consistent action. If the time comes to reduce services and programmes, we can make decisions with a plan that is as objective as human beings can make it. Modern management techniques can turn this difficult period to advantage for archives by critically examining our programmes, perhaps for the first

time in many years. This examination may force us to eliminate extravagances tolerated in better times, demand higher productivity from our staff, and modernize outdated practices, and introduce systems, techniques, and equipment which will prepare archives for the twenty-first century.