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## Preservation of Electronic Records: New Knowledge and Decision-making

## La préservation des documents électroniques : Information récente et prise de décisions



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## Foreword

The preservation of electronic records is one of the latest challenges facing the conservation and heritage communities. It is a complex and multifaceted task that includes content, media, hardware, and software.

The program for *Symposium 2003 - Preservation of Electronic Records: New Knowledge and Decision-making* was developed to deal systematically and logically with the various issues. The organizing partners — the Canadian Conservation Institute (CCI), Library and Archives Canada (LAC), and the Canadian Heritage Information Network (CHIN) — all have extensive experience in the field of electronic record preservation, and each brought a unique perspective on specific aspects of the topic.

But the challenge of preserving electronic records extends well beyond the traditional heritage community. It really includes all custodians of electronic information — from corporations to government agencies to individuals. To meet this need, the symposium also included a separate half-day event for the general public.

The organizing partners were delighted to welcome more than 350 delegates to the symposium; of these, 85% were from Canada, 10% from the United States, and the rest from a variety of countries including Australia, Bermuda, the Cayman Islands, Cuba, France, Italy, Malaysia, Mexico, the Netherlands, New Zealand, Taiwan, and the United Kingdom. Everyone participated actively in the discussions, and returned to their institutions with not only a better understanding of the challenges but also with viable and practical solutions that can be implemented immediately.

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## Avant-propos

La préservation des documents électroniques compte parmi les plus récents défis que doivent relever les collectivités de la conservation et du patrimoine. Cette tâche complexe concerne de nombreux éléments tels que le contenu, les médias, le matériel et les logiciels.

L'objectif du programme du *Symposium 2003 – La préservation des documents électroniques : Information récente et prise de décisions* est de se pencher systématiquement et logiquement sur les divers enjeux. Les organisateurs partenaires – l'Institut canadien de conservation (ICC), Bibliothèque et Archives Canada (BAC) et le Réseau canadien d'information sur le patrimoine (RCIP) – possèdent tous une vaste expérience de la préservation des documents électroniques, et chacun d'entre eux apporte un éclairage unique à des aspects précis de la question.

Mais le défi que représente la préservation des documents électroniques dépasse de loin la collectivité du patrimoine. Il inclut en fait tous les détenteurs de renseignements électroniques – des sociétés aux organismes gouvernementaux, et jusqu'aux particuliers. En vue de satisfaire ce besoin, une activité d'une demi-journée à l'intention du grand public fut présentée dans le cadre du symposium.

Les organisateurs partenaires ont été ravis d'accueillir plus de 350 participants, dont 85 % venaient du Canada, 10 % des États-Unis et 5 % de divers pays y compris l'Australie, les Bermudes, les îles Caïmans, Cuba, la France, l'Italie, la Malaisie, le Mexique, les Pays-Bas, la Nouvelle-Zélande, Taïwan et le Royaume-Uni. Tous ont pris part activement aux discussions, et tous sont retournés dans leurs établissements avec non seulement une meilleure compréhension des défis à relever, mais également avec des solutions pratiques qu'ils seront en mesure de mettre en œuvre sur-le-champ.

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Canadian Heritage Information Network  
Canadian Museum of Civilization  
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Library and Archives Canada  
The Willow Group  
Translation Bureau, Public Works and  
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Les partenaires hôtes désirent remercier le Comité organisateur et tous les bénévoles, les conférenciers, les personnes qui ont présenté des affiches, les présidents de séances, les exposants et les commanditaires, y compris les organismes suivants :

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Le Centre de préservation de Gatineau  
Le ministère du Patrimoine canadien  
Le Musée canadien des civilisations  
Le Musée des sciences et de la technologie du Canada  
Le Réseau canadien d'information sur le patrimoine  
Le studio des enregistrements sonores de la Division  
de la musique (Bibliothèque et Archives Canada)  
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Tunstall & Tunstall Data Recovery Services  
The Willow Group

## Preface

*Symposium 2003 - Preservation of Electronic Records: New Knowledge and Decision-making* took place in Ottawa on September 15–18, 2003, with a program that took the form of a decision tree. Following this format, the sessions could focus on areas that related to each other in a structured manner and all the key issues relating to the preservation of electronic records could be introduced in a logical sequence from the opening to closing speakers. The topics discussed included not only storage media but also the issues that must be addressed before considering how long an electronic record will last. [For the purpose of this symposium, the term “electronic record” was used to describe a large variety of records, e.g. audio and video recordings in analog or digital form and data files such as text, spreadsheets, e-mails, etc.]

The decision tree was initially formulated by the Program Committee, but refined by Tom Strang from CCI and Bruce Walton from LAC. Addressing the key decisions/choices that an institution needs to make when considering the acquisition and preservation of electronic records led to five main session categories: Appraisal of Electronic Records; Authenticity of Electronic Records; Developing a Preservation Strategy for Electronic Records; Preservation Strategies for Electronic Records; and Media Knowledge. The call for papers clearly outlined this approach, and resulted in the submission of more than 45 abstracts. Because of the decision tree program structure, the process to select the papers was very specific. The final program consisted of 29 papers from 6 countries: Canada (14); United States (8); Australia (3); United Kingdom (2); France (1); and Germany (1). In addition to the main program, 4 posters that fit into the program structure were also presented (1 from Canada, 2 from the United States, and 1 from France).<sup>1</sup>

Another objective of the program was to feature a wide variety of small- to medium-sized institutions that included not only archives and libraries, but also cultural institutions such as art galleries and museums that are faced with preserving electronic records. For example, art galleries often include video art in their collections, but the needs of these electronic records are quite different than the needs

## Préface

*Symposium 2003 – La préservation des documents électroniques : Information récente et prise de décisions* a eu lieu à Ottawa, du 15 au 18 septembre 2003, avec un programme qui a pris la forme d’un arbre de décision. Selon ce format, les séances pouvaient porter sur des sujets liés entre eux de façon structurée et tous les points importants concernant la préservation des documents électroniques pouvaient être présentés logiquement, du premier au dernier conférencier. Les sujets discutés incluaient non seulement les supports de préservation, mais aussi les questions à traiter avant de se demander quelle est la durée de vie d’un document électronique. [Nota : Pour les fins de ce symposium, le terme « document électronique » a été utilisé pour désigner un large éventail de documents, comme les enregistrements audio et vidéo sous forme analogique ou numérique et les fichiers de données tels que les textes, les tableurs, les courriels, etc.]

L’arbre de décision a d’abord été formulé par le comité du programme et raffiné ensuite par Tom Strang, de l’ICC, et Bruce Walton, de BAC. Les choix les plus importants que doit faire une institution et les décisions clés qu’elle doit prendre au moment de penser à l’acquisition et à la préservation des documents électroniques ont mené à l’établissement de cinq catégories principales de séances : Évaluation des documents électroniques; Authenticité des documents électroniques; Élaboration d’une stratégie de préservation des documents électroniques et Connaissance des supports. Cette approche a été soulignée dans la demande de communications, et plus de 45 résumés ont été soumis. Grâce à la structure du programme en arbre de décision, le processus de sélection a été très précis. Le programme final a consisté en 29 communications représentant six pays : le Canada (14); les États-Unis (8); l’Australie (3); le Royaume-Uni (2); la France (1) et l’Allemagne (1). En plus du programme principal, quatre affiches qui cadraient avec la structure du programme furent également présentées (une du Canada, deux des États-Unis et une de la France).<sup>1</sup>

Un autre objectif du programme consistait à présenter une grande variété de petites à moyennes institutions possédant non seulement des archives et des

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1. One of the posters that was presented at the symposium was the decision tree that appears on p. 2 of the “Introduction” of this book of postprints. Hence, only three abstracts are included in the “Posters” section.

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1. Une affiche présentée au symposium portait sur l’arbre de décision qui apparaît à la page 2 de l’introduction du présent ouvrage. Par conséquent, seules trois affiches font partie de la section sur les affiches.

of the electronic records typically found in archives and libraries. Thus, the speakers list included several individuals from the museum and gallery communities.

Finally, it was important that the program include some case histories that highlighted what various institutions have actually done or are doing to preserve electronic records. While discussing preservation strategies is important, seeing strategies actually being implemented and working in the real world provides useful information and models to follow. Among the case histories presented were the preservation of audio language recordings from Aboriginal elders in the Northwest Territories in Canada, the preservation of American poet Robert Creeley's computer files, and the implementation of the Victorian Electronic Records Strategy (VERS) within the Government of the State of Victoria, Australia. The case histories were arguably the most useful aspect of a program that included something for everyone.

As a whole, the program provided delegates with a sense of the broader issues involved in collecting and preserving electronic records, as well as knowledge about the challenges that other institutions are facing and how they are dealing with them.

We are pleased to present the papers from the symposium program in this book of postprints. However, because speakers were given the opportunity to revise their papers after the symposium and the final submissions were lightly edited, the text herein may differ slightly from the original presentations.

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*Note: The papers in this book are published in the language in which they were presented, but all include an abstract in both English and French.*

bibliothèques, mais aussi des institutions culturelles telles que des musées qui doivent conserver des documents électroniques. Les musées, par exemple, incluent souvent de l'art vidéo dans leurs collections, mais les besoins de consultation de ces documents électroniques sont bien différents de ceux qu'on retrouve habituellement dans les archives et les bibliothèques. Ainsi, la liste des conférenciers comprenait plusieurs personnes du monde muséal.

Enfin, il était important de retrouver dans le programme des histoires de cas afin d'illustrer ce que diverses institutions ont fait ou font concrètement pour préserver leurs documents électroniques. La discussion des stratégies de préservation est certes importante, mais le fait de connaître des stratégies qui sont mises en œuvre et qui fonctionnent dans une situation réelle permet d'obtenir de l'information utile et d'avoir des modèles à suivre. Parmi les cas décrits, il y a eu la préservation des enregistrements sonores des aînés autochtones des Territoires du Nord-Ouest, au Canada, la préservation des fichiers informatiques du poète américain Robert Creeley et la mise en application de la stratégie VERS pour les documents électroniques de l'État de Victoria, en Australie. On peut soutenir que les cas présentés formaient l'aspect le plus utile d'un programme répondant aux attentes d'un grand nombre de participants.

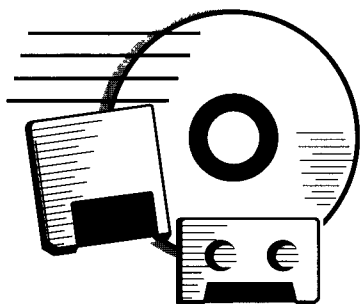
En général, les délégués sont repartis avec une vue d'ensemble des grandes questions liées à la collection et à la préservation des documents électroniques de même qu'une connaissance des problèmes auxquels se heurtent d'autres institutions ainsi que de leur manière de les résoudre.

Nous sommes fiers de vous présenter les communications du symposium dans cet ouvrage. Cependant, étant donné que les conférenciers ont eu l'occasion de modifier leurs textes après le symposium et qu'ils ont été légèrement révisés, il est possible que les textes soient quelque peu différents de ceux présentés durant le symposium.

*Jane Down, ICC*  
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*Joe Iraci, ICC*  
*Mary Murphy, BAC*  
*Patricia Young, RCIP*

*Remarque : les communications sont publiées dans la langue utilisée lors de la présentation, mais toutes sont accompagnées d'un résumé en français et en anglais.*





# APPRAISING DIGITAL MATERIALS FOR PRESERVATION AS CULTURAL HERITAGE

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## Abstract

This paper aims to extract lessons from archivists' experience in appraising electronic records that are likely to have wider application in the preservation of digital cultural heritage. It relies mainly on the work of the Appraisal Task Force of the InterPARES (International Research on Permanent Authentic Records in Electronic Systems) project on long-term preservation of authentic electronic records to develop a picture of the process of appraisal. It concludes that the aspects of assessment of authenticity, determination of the feasibility of preservation, and monitoring of electronic records are likely to find counterparts in attempts to appraise digital objects in other cultural heritage sectors. It also argues that the activities performed during appraisal constitute the first vital step in the process of preservation of digital materials.

## Introduction

It is by now well-known that long-term preservation of materials in digital form presents both organizations and individuals with a significant challenge as they attempt to overcome the adverse effects of technological obsolescence and media fragility. The needs of contemporary societies the world over to keep all kinds of digital objects makes this a problem in virtually every aspect of human endeavour, but it is most pronounced for institutions consigned responsibility for preserving objects of cultural heritage — which are normally kept for as long as they can be preserved. The difficulties of long-term preservation of digital objects grow in complexity with the complexity of digital technology. These difficulties, even for relatively simple digital objects, place a premium on the capability to identify those materials of enduring value, and demand the development of a process of evaluation or appraisal

adapted to the needs of the digital environment. At its essence, appraisal involves making a judgment or estimation of the worthiness of continued preservation. This paper reports on the experience and research in the archival community in coming to grips with this problem of appraising digital objects. It argues that this kind of appraisal is in some ways significantly different from that for traditional documentary objects, that the process is vital to effective long-term preservation, and that there is more to the exercise than meets the eye. The aim is to extract from archival experience lessons likely to be worth pondering in other cultural heritage sectors.

## The appraiser as active agent of preservation

All materials preserved as objects of cultural heritage were originally produced in the course of some human activity and derive their meaning from the context of their creation. Archivists appraise, acquire, preserve, and make accessible documents made and received in the course of the affairs of individuals and organizations, and regularly communicate knowledge about them and their context as part of the exercise of ensuring their continuing accessibility. By the 1980s, archivists recognized that digital documents (which they usually call electronic records) were being produced with little regard to the requirements for their long-term preservation. By the end of that decade, it had become evident that it was difficult if not impossible to preserve digital or electronic documents produced in so-called legacy systems operating just a few years before, because too little attention had been paid to identifying important facts of their creation, relationships, and context, including their technological context. This was the era that John McDonald has called the wild frontier, when people employed computer hardware and

software to make documents, store them, and maintain them with almost no thought for their use outside the immediate environment in which they were created.<sup>1</sup> Archivists concluded that record-keeping requirements, including provisions for determining the disposition of records, had to be part of the design of systems software. In the last few years such software has appeared, but it has not invaded all sectors of human endeavour nor has it been adequate in all situations for all the kinds of digital objects, data, and information being created today. It is likely that archivists' experience will parallel that in other spheres where digital objects are being created and need long-term preservation. In particular, two things are evident. First, digital objects have to contain the means to identify them and their context of creation so that they can be managed beyond the active system in which they were generated, and they have to be maintained so as to avoid corruption or loss of their essential characteristics. Second, the determination of their disposition (i.e. their appraisal) cannot, without significant risk, be delayed to some time in the future when the technology of creation is no longer extant.

This archival experience suggests that anyone acquiring digital objects as cultural heritage will have to seek materials actively in the here-and-now and be prepared to educate creators of these materials about the needs of long-term preservation. Seeking materials in the here-and-now is, given the proliferation of digital objects, an almost overwhelming task. Intervening with advice to promote the needs of long-term preservation is, practically speaking, a task it is all too easy to regard as being quixotic. Still, it is likely that the choice will be between actively appraising materials close to the time of their creation, or finding it is too late to consider long-term preservation or effectively bring it about.<sup>2</sup>

## **The process of archival selection**

In recent years, archivists have done a lot of work to understand and characterize the various activities performed during the archival appraisal process. Relying on this body of work and on the experience of archival institutions, the Appraisal Task Force of the InterPARES project<sup>3</sup> on long-term preservation of authentic electronic records produced a model of the archival selection function.

The model takes the perspective of an entity responsible for long-term preservation of electronic records (hereafter called the preserver). Selecting electronic records involves appraising them and

carrying out their disposition, i.e. effecting the transfer of custody of records selected for preservation from the entity creating them (hereafter called the creator) to the preserver. In any given case, the preserver needs to establish, implement, and maintain a framework of policies and procedures guiding the selection function, such as an acquisition policy or procedures governing actual physical transfer of records from the creator or, if not the creator, then from the entity having custody of them to the preserver. Preserving records responds to the creator's needs or broader societal needs to have continuing access to the records, or to both needs. However, it is particularly necessary to preserve electronic records in such a way that their identity is known and their integrity is not impaired, in short that they are authentic and are what they purport to be. The framework of policies and procedures, the creator's and societal needs, and the dictates of archival science all act as constraints on the process, as do the terms of laws or regulations that apply to records.

## **Archival appraisal of electronic records**

Appraisal of electronic records comprises four distinct activities:

- compiling and analysing information about the records and their contexts
- assessing their capacity to serve the needs of their creator and society
- determining the feasibility of preserving them
- making the appraisal decision on the basis of the foregoing

Although evaluating digital objects other than those of archival nature for the purposes of long-term preservation may very well take on a somewhat different cast from that for records, it is worth looking at these four activities because they are likely to be very generally applicable to appraisal of all digital objects.

### **Compiling information**

The first activity involves compiling information about the digital object or objects. Archivists normally appraise records in the natural aggregations to which they belong. These aggregations are natural in the sense that any given activity will produce records as part and parcel of conducting it. One can construe information relevant to the process of evaluation from the objects themselves about their form, content, and so on, or one can compile information from sources external to the records about the various contexts of the objects relevant to their evaluation.

The InterPARES project identified five distinct contexts of records:

1. The *juridical-administrative* context refers to the legal and administrative system in which the creating body exists. It is the broad societal context of the country or territory where the objects were produced at the time they were produced.
2. The *provenancial* context refers to the creating body, and its mandate, structure, and functions. For records produced by individuals, provenancial context would be the sphere(s) of affairs and the various activities in which the person who produced the records was involved.
3. The *procedural* context refers to the business procedures in the course of which the records were created. Although business procedures suggest a bureaucratic environment, the concept can be extended — for instance to encompass procedures in scientific activity or the routines followed in the mode of creation or production in artistic activity.
4. The *documentary* context refers to the structure and interrelationships of the whole body of records produced by an entity. It is an indispensable condition of archival appraisal that decisions take into account the whole body of records, the meaning of individual records being dependent on their various relationships with other records in the whole body of records under consideration.
5. The *technological* context refers to the technical components of the electronic systems in which the records were created — the hardware, software, data, and systems with which or within which the records were created.

### Assessing value

Throughout the process of compiling contextual information, archivists also accumulate inferences about the likelihood the records under consideration will have continuing value, and about the degree to which they are likely to have remained uncorrupted or unchanged over time (i.e the degree to which the records can be presumed to be authentic). Continuing value simply refers to the capacity of records to serve the continuing interests or needs of their creator and society. For the broader purposes of this essay, continuing value might be considered the capacity of digital objects to serve as an expression of cultural heritage, or some such general notion. For electronic

records (and perhaps for other digital objects) assessing value comprises assessing continuing value and assessing authenticity. Assessment of continuing value is, of course, the most critical element, but that assessment is obviously affected by an assessment of the grounds for presuming the records to be authentic. In large measure, archivists gather and evaluate evidence of what has happened to records during the course of their existence in order to assess authenticity. As the report of the Appraisal Task Force puts it:

In cases where the chain of custody and preservation has been broken or where migration has resulted in missing records, missing parts of records, or inadequate documentation of changes, there may be good reason to suspect the value of the records. If the appraiser has good reason to suspect that the records no longer reflect what they were at the time of their creation and primary use, he or she may decide not to preserve them.<sup>4</sup>

Such evidence is not always easy to come by long after the fact of creation, which is one reason to intervene soon after digital objects are created. One might reasonably assume that assessment of the authenticity of other than archival digital objects will also affect judgments of continuing value. The proposition would go something like this: the greater the extent to which you can presume something to be the real thing, to use a common phrase, the more likely one is to accord it continuing value. Given the great facility that exists to alter things in the digital environment, this two-faceted assessment to determine value is very likely to become a regular feature of the process of evaluation of any kind of digital material for the purposes of long-term preservation.

### Determining the feasibility of preservation

Another aspect of appraisal in the digital environment is determining the feasibility of preservation. Archivists have, of course, always had to consider the feasibility of preserving records, but for electronic records this aspect of the process becomes a more critical element in the process than it ever was with traditional materials (where it had rarely been the case that it was simply not possible to preserve). This very outcome is more likely to occur with digital materials.

To explain what is involved in determining the feasibility of preservation, suppose that you have compiled all the information you need, analysed it carefully to make an informed judgment about

continuing value, and assured yourself that there is good reason to believe that what you have assessed is indeed authentic. You still have to ask yourself "Can I preserve these digital objects in such a way that the essential elements conferring their identity and ensuring their integrity can be preserved?" This question is important because, in the digital environment, records are not actually preserved but rather digital objects and the capability to reproduce them. This is not a problem so long as the digital objects exist in their native environment, but short of perpetuating that environment or re-creating it in the future, the only other strategies are to sustain the capability of making copies. This involves determining that the digital components conferring the identity and ensuring the integrity of the things you want to preserve *can indeed be preserved given current and future anticipated preservation capabilities*.

The InterPARES Appraisal Task Force broke this activity of determining feasibility of preservation into three phases:

- determining both the record elements containing informational content and those elements needing to be preserved according to the requirements for authenticity
- identifying where these crucial record elements are manifested in digital components of the electronic record that must be preserved
- reconciling these preservation requirements with the preservation capabilities of the entity that is responsible for the continuing preservation of the body of records being preserved

The InterPARES project developed a set of requirements for authenticity for archival documents or records in the digital environment. Although requirements to ensure authenticity will vary for other kinds of digital documents and objects, there seems to be little doubt that appraisers of such documents and objects will have to perform a parallel activity of determining feasibility. As the final report of the Appraisal Task Force puts it, "this feasibility determination gathers and records technical information that is necessary to accomplish preservation of the individual elements conveying both the intellectual content and the authenticity of electronic records being appraised." As well, this part of the process gathers information about "the projected cost of preservation and an indication of whether or not the preserver has [or can foresee having] the capability to preserve the records in question."<sup>5</sup>

At this juncture, something needs to be said about the cost of preservation. Except to mention that it is a factor in determining feasibility, the Appraisal Task Force did not dwell on cost. My own view is that the cost of preservation of digital objects of all kinds is both difficult to determine and will be rather more determinative of the outcome of appraisal than it was for traditional materials. Again, much as in the case of continuing value, there is little experience to go on. However, it is reasonable to project that some cost will be incurred regularly to cope with technological obsolescence, as well as the normal storage and maintenance costs, including copying to new media. Because these costs are difficult to predict and will probably have an escalating quality to them the further one removes oneself from the native technological context, there is bound to be extra pressure on appraisers to select only those digital objects with continuing value that can be strongly justified. When the lack of precedent for establishing continuing value is combined with the need to justify it as benefit in a cost-benefit analysis as part of determining feasibility of preservation, it is likely that calls for reappraisal will not be long in coming. In my view, much as I oppose reappraisal as a rule, it is probably necessary to accept that we are in an era of experimentation, and will have to test the efficacy of decisions we make against the cost of continuing preservation, at least until there is some solid experience on which to rely.

There is one other element of cost to consider. It seems pretty clear that developing and maintaining what almost by definition must be a cutting-edge capability to preserve digital objects is very expensive. Few archival institutions in the world have yet developed that capability, in part, no doubt, because any serious effort is costly both to establish and to keep up. It is easy enough to say that every archives, library, and, no doubt, many museums and other institutions should get into the game. Still, I think that the significant expense holds many institutions back as much as, if not more than, other factors. I would think that a national strategy of preservation of digital cultural heritage would be the best way to address these cost concerns. In the archival field, the path we have been following up to this point is not resulting in widespread preservation of electronic records. Given that information technology is widely used to create and maintain records in both formal organizational circumstances and in personal affairs, to continue on the same path risks serious loss of our ability to sustain a vibrant archival documentary heritage.

### **Making the appraisal decision**

After carefully considering the foregoing, a final decision can be made on if, and how, electronic records should be preserved.

### **Monitoring appraised records**

At the beginning of this paper, it was remarked that one of the earliest conclusions archivists reached about appraising electronic records was that, to be effective, it had to be done close to the time of creation or at least while the records were still active. It can be further supposed that if the records were appraised long before they were actually taken into the custody of the preserver, it will be necessary to monitor what is happening to them from time to time. The purpose of monitoring appraised records is to determine whether the terms of an appraisal of records earmarked for continued preservation are still valid. Although many changes affecting records will require little or no change to an initial appraisal, in some cases minor revisions (e.g. to the terms and conditions of transfer from the creator to the preserver) will be needed. "However, in cases where the business processes and related computer systems are significantly revamped or rebuilt, it will obviously be necessary to consider initiating a disposition under the terms of the original appraisal *and* — for the two will likely go together — redoing the appraisal to take into account the radically altered situation."<sup>6</sup> The problem this kind of monitoring addresses is most familiar to archival preservation tied to the ongoing production of records of a parent organization. Of course archives are not unfamiliar with acquiring records from individuals and organizations in the community. In such circumstances, appraisal and its monitoring aspect will undoubtedly be more complicated, but, in light of how difficult it is to arrive on the scene years after the fact of creation of digital material and conduct appraisal, some regimen of regular contact with prospective donors appears to be necessary in this realm as well.

### **Carrying out disposition of electronic records**

The activity of effecting disposition of electronic records according to the appraisal decision breaks down into three activities:

- preparing electronic records for disposition
- preparing electronic records for transfer to the responsibility of the preserver
- transmitting electronic records to the preserver

As archivists see the process, appraisals set out the terms and conditions of transfer of records from the creator to the preserver, and indicate who is to do what and when they will do it.

The first step comprises copying and, if necessary, formatting those electronic records selected for preservation so as to prepare them physically for transfer. The next step is to associate records selected for preservation with the necessary information for their continuing preservation, such as the terms and conditions of transfer, identification of the digital components to be preserved, and associated archival and technical documentation needed for their treatment. This information is usually compiled and recorded during the various stages of appraisal and monitoring. "The task at this stage is to extract the information necessary for continuing preservation of the records from the mass of appraisal documentation, and associate it with the records."<sup>7</sup> The third step is to transmit the records selected for preservation along with accompanying information to the preserver.

Careful work in this phase of the process is absolutely vital. Archivists who are familiar with efforts to effect disposition of electronic records can recite a litany of horror stories. The wrong records have arrived, or records have arrived in the wrong format or with no accompanying documentation. Imagine turning up a disk in someone's desk drawer years hence simply because some well meaning soul asked for a copy of something interesting.

### **Conclusion**

Preservation of electronic records and, arguably, other digital objects depends on effective appraisal (in the ways outlined in this paper) to a greater extent than does preservation of traditional materials. Although archival selection undoubtedly differs in some of its particulars from selection in other heritage preservation sectors, anyone appraising and acquiring digital objects will have to go through similar steps or phases in order to ensure their effective preservation. In this sense, appraisal is a necessary first step in the preservation process, or so it would seem to judge by the experience of archivists.

### **Endnotes**

1. McDonald, J. "Managing Records in the Modern Office: Taming the Wild Frontier." *Archivaria* 39 (Spring 1995), pp. 70–79.

2. The conclusions reached in this section are distilled from a survey of the literature on archival appraisal done by the InterPARES project [see Eastwood, T. *Appraisal of Electronic Records: A Review of the Literature in English* (a report for the Appraisal Task Force with contributions from Shadrack Katuu, Jacqueline Killawee, and Jeff Whyte), May 2000]. [www.interpares.org/documents/interpares\\_ERAppraisalLiteratureReview.pdf](http://www.interpares.org/documents/interpares_ERAppraisalLiteratureReview.pdf)
3. The InterPARES (International Research on Permanent Authentic Records in Electronic Systems) project was a collaborative, multidisciplinary, and international research endeavour that involved 60 researchers from 11 countries. Its aim was to develop the theoretical and methodological knowledge necessary for the long-term preservation of the authenticity of electronic records.
4. *The Long-term Preservation of Authentic Electronic Records: The Findings of the InterPARES Project. Part Two — Choosing to Preserve: The Selection of Electronic Records*, p. 10. [www.interpares.org/book/interpares\\_book\\_e\\_part2.pdf](http://www.interpares.org/book/interpares_book_e_part2.pdf)

5. *Ibid.*, p. 11.

6. *Ibid.*, p. 14.

7. *Ibid.*, p. 17.

## Résumé

Nous tirerons les leçons de l'expérience des archivistes en matière d'évaluation des documents électroniques, susceptibles d'avoir une application plus vaste dans la préservation du patrimoine culturel numérique. Nous nous sommes surtout inspirés du travail du Groupe d'évaluation du projet InterPARES (International Research on Permanent Authentic Records in Electronic Systems) concernant la conservation à long terme de documents électroniques authentiques pour décrire la procédure d'évaluation. Celui-ci conclut que les aspects de l'évaluation relatifs à l'intégrité, à la détermination de la faisabilité de la préservation et au suivi des documents électroniques se retrouvent probablement dans les questions que soulève l'évaluation de produits numériques dans d'autres secteurs du patrimoine culturel. Il fait également valoir que les activités d'évaluation sont une première étape cruciale de la procédure de préservation des produits numériques.