Appraisal Task Force Report

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Introduction

The Appraisal Task Force set out to determine whether the theory and methodology of appraisal for electronic records differs from that for traditional records, and what role the activities of appraisal play in the long-term preservation of electronic records. In doing so it relied heavily on and coordinated its work with the other two InterPARES Project task forces. The original InterPARES research plan asked the Appraisal Task Force to answer seven questions in its domain of investigation (Domain 2):

- What is the influence of digital technology on appraisal?
- What is the influence of retrievability, intelligibility, functionality, and research needs on appraisal?
- What are the influences of the medium and the physical form of the record on appraisal?
- When in the course of their existence should electronic records be appraised?
- Should electronic records be appraised more than once in the course of their existence, and, if so, when?
- Who should be responsible for appraising electronic records?
- What are the appraisal criteria and methods for authentic electronic records?

Although these questions animated the research, many other questions—often related but sometimes new—were to arise. The research moved through three phases. It began with a review of the literature on the appraisal of electronic records. It then examined the available documentation from archival institutions on their appraisal policies and procedures, as well as reports on actual appraisals of electronic records. The final phase, and the most important, involved developing a function model of the selection of electronic records in order to gain a detailed understanding of the nature of the activities in appraising electronic records to be preserved in authentic form. Selection encompasses both appraising and carrying out the disposition of electronic records. It was mainly during the modelling that new questions arose and were answered.

It is worthwhile emphasizing that the task force aimed primarily to identify the specific junctures in the selection process when issues of authenticity come into play. It was for this reason that it has relied heavily on the conceptual requirements for assessing authenticity developed by the Authenticity Task Force and on the preservation requirements developed by the Preservation Task Force. The activities of appraisal determine which records need long-term preservation and the various terms and conditions applying to their continuing preservation beyond the time of their active life in relation to the affairs that created them. Conceptually, this determination involves passing the responsibility for preservation from the creator to some entity assigned responsibility for long-term preservation. The most important aspect of this passing of responsibility is to ensure, as much as is possible, that the *identity* and *integrity* (as defined by the Authenticity Task Force) of the records can be established and preserved over time.[1] The conceptual requirements for assessing authenticity are therefore an important guide in the process of identifying electronic records and establishing their integrity during appraisal. The requirements for preservation come into play in a vital way when we assess the feasibility of preserving authentic electronic records. The work of the Appraisal Task Force must therefore be viewed in the light of the work and results of the two other task forces. The main connections and consequences of these relationships are outlined in this report.

The primary outcome of the work of the Appraisal Task Force is the function model of the selection process. It and the thinking behind it represent the main contribution of the task force to the problem of long-term preservation of authentic electronic records, as this report will explain at length.

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[1] See "Authenticity Task Force Report.", p 20.

Basic Assumptons of the Research

Definition and situation of appraisal

In common usage, *appraisal* is defined as "the act of estimating the nature, quality, importance etc." of something.[2] Archival dictionaries and glossaries speak of appraisal as being "a basic archival function" aimed at determining the disposition or disposal of records, that is, usually either their continuing preservation or their destruction. In some cases, records may be alienated from their creator.[3] Appraisal involves making a judgement or estimation of the worthiness of continued preservation of records. The Appraisal Task Force treats the term *appraisal* in this sense of coming to a determination of the disposition of records. However, the task force considered that the function at issue is broader than the matter of determining the disposition of records. It did so because appraisal is usually part of the act of acquisition of records by the entity responsible for their long-term preservation, the preserver. Most commonly, the preserver appraises records, that is, determines the worthiness of their continuing preservation, *and* carries out their disposition. Carrying out the disposition of records usually (but not always) involves a transfer from the creator to the preserver of the custody of those records determined to be worthy of continued preservation and/or destruction of records not deemed worthy of long-term preservation. In situations where the preserver has responsibility for appraisal, it often comes to decisions about the fate of records in consultation with the creator. Carrying out disposition is also often a shared responsibility between the creator and the preserver. Responsibility to destroy records may fall to the creator or to the preserver, or be shared by them.

The preserver is the juridical person whose primary responsibility is the long-term preservation of authentic records. The preserver may be an archival institution, such as a national, state, or provincial archives given responsibility for the long-term preservation of the records of a governmental organization. It may be an office of an organization, as is often the case with the archives division or department of such organizations as churches, businesses, and universities. It may even be an office (or officer) within the entity creating the records; this would be the case, for instance, where an agency's archives within an organization such as a government were given responsibility for long-term preservation of electronic records. In short, there must be some entity that is assigned responsibility for preservation. Therefore, the task force proceeded from the perspective of this entity and with long-term preservation in mind.

Whatever the division of responsibilities may actually be, it is necessary to conduct appraisal to identify records worthy of continued existence, then carry out the disposition of records determined to be of long-term value, and finally set in motion arrangements for their preservation. It is this selection function, rather than the differences in the way responsibility for them is actually assigned, that interests the task force. It is assumed that the activities of appraisal and carrying out disposition, once they are understood in sufficient detail, can be conducted in numerous administrative contexts.

The other premises of the research are found in concepts, such as "electronic record" and "authenticity," of the project at large. Where it is necessary in this report, these other concepts are discussed.

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[2] *Webster's Encyclopedic Unabridged Dictionary of the English Language*, 1989 ed., s.v. "appraisal."

[3] The creator is the physical or juridical person in whose archival fonds the record exists. The fonds is the whole of the records created (meaning made or received and set aside for action or reference) by a physical or juridical person in the course of carrying out its activities.

Research Design and Methodology

Literature review

In the first stage of its research, the task force conducted a review and analysis of the existing literature on appraisal of electronic records to confirm or reject the various research questions with which it began. For the most part, it confirmed the wisdom of these initial questions. The full review is reproduced in Appendix 3; however, some of the main findings are worth repeating here.

The review determined that a consensus had developed that electronic records must be appraised from the same theoretical and methodological standpoint as traditional records. In other words, important as the influence of technology is on certain aspects of methodology, writers still employed the same general concepts in their writing about electronic records, particularly in assessing the full context of electronic records and their continuing value. In the view of many writers, the main influence of the technology was in fact a negative one. Few creators made adequate provision for electronic record keeping, with the result that it was difficult to determine what an electronic record was in many cases and therefore to conduct appraisal of such records. In particular, archivists wrestled with the problem of what to do with dynamic databases, many of which were implicated in record keeping but did not actually produce records.

Many writers discussed the question of the timing of appraisal. Almost all of them concluded that appraisal had to be conducted early in the life of systems producing the records. There were accounts of both appraisal and preservation activities being hindered because records had been removed from active systems without adequate documentation of their context of creation. To avoid these problems, most writers advised early archival involvement with creators to determine records of continuing value and to develop procedures for their disposition.

The review implicitly reveals that writers rarely addressed the application of the concept of authenticity to appraisal. For the most part, they assumed that preserving electronic records in authentic form is a matter for the preservation function. Appraisal determines which records are to be preserved; it is then up to the preserver to ensure their continuing identity and integrity. Although that is true, the work of the task force explicitly shows that the concept of authenticity has important application during appraisal, as will be explained.

Review of policies and procedures

The review of policies and procedures of archival institutions and programs amplified the findings of the literature review, as might be expected. It also revealed that only a small number of institutions and programs had anything like extensive experience appraising electronic records. Those that did appraised electronic records in conjunction with and using similar methodology to that for traditional records.

The main documentation of value proved to be actual reports of appraisal of electronic records. These reports revealed that archivists expended much time and energy to appreciate the various contexts of the records, including of course the technological context; applied criteria familiar in the appraisal of traditional records; and spelled out the terms and conditions of disposition of records deemed worthy of continuing preservation. Together the reviews of the literature and policies and procedures provided a body of empirical knowledge used in the task force's main exercise to develop a function model of selection.

Modelling the selection function

A function model represents the various activities of a functional process in a series of structured diagrams. The task force used IDEF(0) or Integration Definition for Function Modelling, which is derived from Structured Analysis and Design Technique. IDEF(0) is a U.S. Federal Information

Processing Standard, which is detailed in Publication 183 of the National Institute of Standards of Technology.[4] The model and the related definitions of terms are reproduced in Appendix 4.

The purpose of the model is to characterize the relationships of the activities involved in selection of authentic electronic records for long-term preservation. The model is produced from the viewpoint of the entity responsible for the long-term preservation of electronic records of an organization. The assumption is that the same activities occur in any context where selection is performed. Arrows pointing into a box representing an activity indicate inputs. Arrows pointing outwards from boxes indicate outputs. Arrows pointing down from the top of boxes indicate constraints on the activity, and arrows pointing upwards the mechanisms necessary to accomplish the activity.

The following discussion can be read independently of the model. However, diagram numbers are given to aid those readers interested in finding the part of the model relevant at any point in the explanation of the process.

The task force employed modelling methodology in order to isolate and characterize the various activities of the selection function. The methodology requires consistency and careful definition of the concepts and terms used in the model. However, the model itself, because it depicts a highly intellectual and complex process, needs considerable explanation, which the next section of this report provides.

Research Findings

Preamble

The work on the model began in early 2000. At this time, the Authenticity Task Force had already developed the *Template for Analysis* of electronic records to be used by the project. The *Template* and, subsequently, the *Requirements for Assessing and Maintaining the Authenticity of Electronic Records* provided an important conceptual framework for the thinking behind the modelling. In several meetings of the task force over the next year and a half, the model was refined and coordinated with the work of the other two task forces.

The Scope of the Main Activities in Selection (Diagram A0)

From the perspective of the preserver, appraisal is obviously a vital first step in the process of preservation. Selecting electronic records involves appraising them *and* carrying out their disposition. Carrying out disposition acts as a bridge between the activities of appraisal and those of preservation. Information about electronic records amassed during their appraisal is vital to the actions taken to determine and carry out their disposition and then, later on, to the actions taken to preserve them. Nevertheless, it is important to note that responsibility for the actions of carrying out disposition will probably be shared between the creator and the preserver in most instances. Clearly the organization's policies and procedures will have to sort out the responsibilities that fall to the creator and those that fall to the preserver as part of the disposition rules guiding transfer of records.

The point about disposition rules makes it clear that one of the activities of selection is to establish, implement, and maintain a framework for the selection function. Managing the selection function also sets the rules and conventions for the preserver that govern appraisal.

Many problems that occur in the archival treatment of electronic records stem from changes in the records' context over time. Monitoring these changes is a distinct activity; it ensures that up-to-date information about records is compiled and that appraisal decisions are updated accordingly or, where there is a need, revisited. To a large extent, monitoring electronic records selected for preservation is our answer to the research question, "When in the course of their

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[4] See <http://www.idef.com/idef0.html> for more information.

existence should electronic records be appraised?" The answer is frequently dictated by the circumstances of change in the context of the records. In cases where the appraisal decision is built into design of electronic systems, such as by records scheduling, or where it is conducted sometime after a system has been in operation, monitoring records selected for preservation and making adjustments as needed is part of the process of selection. By contrast, appraising electronic records long removed from the active system in which they were generated is usually made more difficult because the relevant information about their technological and other contexts is no longer available or difficult to obtain.

Selection, therefore, encompasses four main activities: (1) managing the selection function, (2) appraising electronic records, (3) monitoring electronic records selected for preservation, and (4) carrying out the disposition of electronic records.

The Broad Picture of Selection (A0)

Selecting electronic records for long-term preservation—like selecting records in general—responds, broadly speaking, to societal needs and to the creator's needs for continuing reference to the records. It also responds, explicitly or implicitly, to certain legal requirements, that is, to the concepts, principles, and specific statements in law relevant to the selection of records. All the activities of selection are conducted with an understanding of the theory, methodology, and practice of archival science, including the requirements for ensuring authenticity of records. Societal needs, creator's needs, legal requirements, and archival science and authenticity requirements all condition or influence the process of selection. How they influence actions and decisions from juridical system to juridical system or for any one preserver is a question that is beyond the scope of our research. Nevertheless, it seems obvious that managing the selection function is largely a matter of taking these conditioning factors into account when developing policies, strategies, procedures, and standards.

It hardly needs saying that the successful selection of electronic records requires knowledgeable persons, certain facilities, and computer equipment and software. These are the necessary instrumentalities of selection. As mechanisms employed in carrying out selection, they are needed for all of the activities described in this report.

Broadly speaking, selecting electronic records means identifying records for transfer to the preserver for continuing preservation. From among the electronic records produced by an organization, some will be selected and transferred to the preserver and some will not. The outcome in any given case will either be a transfer of electronic records selected for preservation from the creator to the preserver or a designation of electronic records not selected for continuing preservation. It is a matter of organizational policy whether or not the preserver plays a role in the disposition of electronic records not selected for preservation. In any event, the outcome or result of selection is that electronic records both destined and not destined for continuing preservation are identified.

The work of the task force has confirmed something that is implicit, but not spelled out clearly, in the literature on appraisal of electronic records. In large measure, selection of electronic records depends upon a gathering and assessment of information concerning the context of a given body of records or deriving from the records themselves. Relevant information gathered during the process must then be associated with the records so that they can be managed effectively by the preserver and easily understood by future users. Obviously, a great deal of information about the context of electronic records exists while they are in active use, because it is needed for the continuing management of the records. This information often disappears or is difficult to assemble once records are removed from the active system in which they were generated. This situation provides a strong argument for beginning the appraisal process while records are still "live" in a system, and monitoring each phase of their existence to keep appraisal decisions relevant and disposition plans practicable.

In particular, information about the technological context of electronic records comes into play at two vital stages of selection. It is needed when assessing records' authenticity, and when determining the feasibility of preserving authentic electronic records, as later parts of this report

spell out in greater detail. The other contextual information (juridical-administrative, provenancial, procedural, and documentary) tends to be relevant when assessing the continuing value of records, that is, judging their capacity to serve the continuing interests of society and their creator.[5] For the most part, appraisers draw inferences about the continuing value of records from an understanding of the records and their various contexts.

Two kinds of information result from the appraisal process. There is information about the appraisal decision itself, and information about the electronic records selected for preservation and "packaged" with them as part of a transfer from the creator to the preserver. The latter is the information about electronic records necessary to maintain them continuously in authentic form, and includes the terms and conditions of transfer,[6] to which the preserver may have to refer from time to time, such as when determining that a transfer contains the actual records designated to be transferred in a particular case.

Managing the selection function (A0, A1)

<u>Constraints on the process</u>
The preserver needs to establish, implement, and maintain a framework of policies and procedures guiding the selection function. The purpose of management is to make sure that the preserver's requirements for selection of authentic electronic records are met effectively and efficiently. Managing the selection function means taking responsibility for the whole process, both the quality of its outcome and the efficiency of the process. The main responsibility is to ensure that those records of continuing value are identified and capable of being maintained according to the appropriate authenticity requirements.

Typically, the activity of managing a process transforms external requirements into internal directions. Furthermore, it generates feedback from internal processes and reacts to these feedback signals by modifying directions. Like any higher-level management process, it is not too structured, and this is also true for the knowledge and information used and processed in the function. The main process could be described as follows: collecting and evaluating requirements for, constraints to, and opportunities for potentially appropriate operational appraisal strategies. Indeed, like any management process, it is focused on matching external needs, requirements, and constraints with the possibilities of the system or processes to be managed. One other characteristic of managing is its relative autonomy in interpreting external requirements and gathering relevant information. This means that it is not possible to establish policies, strategies, procedures, criteria and standards that will fit all circumstances. Instead, we can only indicate the general considerations that go into building the managerial framework.

The external conditioning factors on the selection function are assessed during analysis of the creator's needs for effective disposition of records, the broader societal needs for reference to records, the necessity to observe and meet authenticity requirements, the imperatives of any legal requirements bearing on the records, and, of course, the need to observe the concepts and principles of archival science. The notion of creator's needs and societal needs is a familiar one in archival science. Schellenberg recognized creator's needs in his concept of primary value, and

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[5] The *Template for Analysis* has defined the various contexts of an electronic record and therefore, by implication, of the various aggregations of electronic records such as are examined during appraisal. *Technological context* is "the hardware and software environment in which the record exists or was created." *Juridical-administrative context* is "the legal and organizational system in which the creating body exists." *Provenancial context* is "the creating body, its mandate, structure, and functions." *Procedural context* is "the business procedure in the course of which the record is generated." *Documentary context* is "the fonds to which a record belongs, and its internal structure." Internal structure refers to the relationships among the records in a fonds.

[6] The task force has defined *terms and conditions of transfer* as "a document that identifies in archival and technological terms electronic records to be transferred, together with relevant documentation, and that identifies the medium and format of transfer, its timing, and the parties to the transfer."

societal needs in his concept of secondary value.[7] These needs include requirements for rendering accountability in the political, administrative, fiscal, legal, and broader societal senses. All these constraining factors are considered when developing the policies, strategies, procedures, criteria, and standards guiding the selection function.

Obviously, external factors such as creator's and societal needs and legal requirements will vary from situation to situation. They are factors that will, through policies and so on, influence the value judgements made during appraisal. The requirements dictated by the concepts and principles of archival science are another matter. In fact, the concept of authenticity and the conceptual requirements for assessing authenticity are matters of archival science. Because they are the most important concepts bearing on long-term preservation of *authentic* electronic records, and to ensure that they are recognized as an important conditioning factor of the process, authenticity requirements are highlighted as a separate constraint on managing the selection function. They explain the concepts guiding practice. Even though the application of authenticity requirements in any given case may be a matter of judgement, it is not a value judgement that is at issue, as is the case in judging continuing value to the creator and society. The manner in which authenticity requirements guide the conduct of appraisal will be looked at in some considerable detail as we move through the specific activities in which they come into play.

Information needed for management

Essentially, four kinds of information are needed to support the development of policies, strategies, and procedures guiding selection: information about the records' context, information about appraisal decisions, information about updated appraisal decisions, and information about disposition.

In any given case, the preserver aiming to develop a framework for selection must gather information about the context in which records for which it has responsibility are created. For instance, if the preserver is a government archives, what range of agencies is it responsible for, under what administrative arrangements, performing which functions, and so on. Information of this kind feeds directly into the process and comes out of it in statements (such as on the scope of records to which the policy applies) in the framework.

Information about appraisal decisions already made provides valuable intelligence about the success or lack of success of the process, and as such is an important input to establishing, implementing, and maintaining an effective framework. Where the process of monitoring electronic records selected for preservation results in updated appraisal decisions, information about these updated decisions and the reasons for them also provides valuable intelligence to feed into the process of managing the framework.

Much the same is the case with information about the disposition of electronic records. Experience of actual dispositions over time will reveal information useful for managing the framework, such as whether appraisal decisions are properly implemented.

Results of managing selection

There are two aspects of the framework. One is a set of rules and conventions governing the conduct of appraisal, which for convenience we call the *appraisal strategies.* The appraisal strategies operate as controls on the processes of appraisal of electronic records and monitoring of electronic records selected for preservation. The appraisal strategies encompass:

- criteria for appraisal
- guidelines on how to apply authenticity requirements
- procedures for carrying out appraisal
- guidelines for reporting the results of appraisals

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[7] T. R. Schellenberg, *The Appraisal of Modern Public Records*, Bulletin 8 (Washington: National Archives and Records Service, 1956).

- procedures for reporting on appraisal activities

The second aspect is a set of rules and procedures governing the conduct of disposition of electronic records. The rules and procedures act as a control on the activity of carrying out the disposition of records. These rules and procedures include:

- procedures for carrying out disposition (e.g., roles and responsibilities of the creator and the preserver)
- rules for disposition (e.g., acceptable formats for transfer, means of transmission of records, etc.)
- procedures for reporting about disposition activities (e.g., character and volume of records acquired and/or destroyed)

Appraising Electronic Records (A2)

When applied to any given body of records, selection can be broken down into two main processes. First, a decision is made with respect to the records' disposition; then that decision is implemented, that is, the records are transferred or otherwise disposed of. Furthermore, the creation of information "packages" to document the appraisal decision and the records to be preserved is crucial to allow for the performance of other archival functions, such as preservation and description. Within the larger context of the selection of records, therefore, appraisal is the activity during which relevant information is gathered and compiled, and a disposition decision is made.

We have viewed appraisal as being made up of four distinct activities: compiling information about the records and their contexts; assessing the value of the records; determining the feasibility of preserving them; and finally, making the appraisal decision. This breakdown is based on a decomposition of appraisal into its logical component activities or functions, and it is not meant to specify a precise work flow. It does not make any assumptions about the organizational setting in which the activities take place. It does, however, assume that there is a strong chance the continuing value of records differs from the records' operational value to their creator, and that the continuing value should be determined according to a different set of criteria from that for operational value.

Appraising a body of electronic records is to decide on their disposition. If they are deemed to serve some enduring need of their creator or society, the records will be preserved. One common way of doing this is by transferring them to an entity, such as an archival institution or program responsible for the records' continuing preservation. It is also possible that the creator will preserve them indefinitely, possibly by an archival unit, possibly under the supervision of an outside archives authority. If the records are not deemed valuable, they will be destroyed or, perhaps, be alienated to the care of some other entity.

Compiling Information

In order to conduct an appraisal, the person or persons conducting the appraisal (the appraiser) needs information drawn from reading the form and content of the records, and information about the records' various contexts (juridical-administrative, provenancial, procedural, documentary, technological). The appraiser gathers, organizes, and records this information as a vital part of the process of determining disposition of the records. Information may come from publicly available sources, as well as be obtained from the creator's personnel or documentation, and from the records themselves. The precise nature and scope of the information required depends on the particular appraisal methodology and criteria that the preserver has implemented.

It should be stressed that during this vital activity of appraisal, inferences are accumulated about the continuing value of the records and about the grounds for presuming them to be authentic. Referring to this activity as "compiling information" may mislead. Appraisal must rest on a foundation of solid research, which will assist in performing several of the activities we have identified, particularly assessing the value and the authenticity of the records, and identifying the digital components that have to be preserved.

Assessing Value (A22)

The archivist uses the information gathered and compiled to determine the capacity of the records to serve the continuing interests of both their creator and society. The archivist answers the question: "How valuable are these records? How important is it to preserve them?" The output of that activity is an assessment of the continuing value and authenticity of the records, as well as information about the criteria that were used to make that assessment and how they were applied. This assessment may be further decomposed into three activities: assessing the continuing value of electronic records, assessing their authenticity, and determining their value.

Assessing continuing value

This first activity results in a statement of the reasons why the records should or should not be preserved, according to the criteria decided upon by the preserving institution. Because it involves values and judgement, appraisal may be performed differently according to different national or intellectual traditions, juridical systems (including legislation), value systems, and theoretical choices. Archivists engage in heated debates about appraisal criteria and methodologies, and for good reason. As an example, one could study the records themselves and determine which elements are likely to give them continuing value, for example, their usefulness for legal purposes, their value as evidence of the functioning and organization of their creator, or their potential for research. Another approach—particularly useful when there are vast amounts of records, created during complex, intertwined processes—is to start by appraising not the records themselves but the functions performed by the records creator, to determine which ones should be documented for posterity, and then to find out which records better reflect the accomplishment of these functions and their impact on society. Since our goal here is to come up with a model of the appraisal activity that applies in a number of different contexts, we deliberately omitted specifying which criteria or values, strategies, and methodologies should be employed.

Assessing authenticity (A222)

A second component in the assessment of value is an assessment of the records' authenticity. The appraiser must establish the grounds for the presumption of authenticity. He or she must ensure that the records' identity (e.g., parties involved, date, subject matter, and archival bond) is preserved, and must ascertain the degree to which the records' creator has guaranteed their integrity, by making sure that the records remain intact and uncorrupted. The questions to be asked of the records at this stage correspond to the Benchmark Requirements Supporting the Presumption of Authenticity of Electronic Records defined by the Authenticity Task Force of InterPARES in the *Requirements for Assessing and Maintaining the Authenticity of Electronic Records*.[8] Answering the questions requires an in-depth knowledge of the records, the electronic systems they reside in or were created in, and the wider context of their creation and use. For example, such an important element of identity as the author of the record may in fact be found in the provenancial context (the owner of the system) rather than on the face of the record. Integrity may be maintained through safeguards built into an integrated electronic record-keeping system (the technological context of the records), or it could be ensured through policies, procedures, and practices in the environment of the electronic system. Examples would be physical restrictions on access, policies on access privileges, procedures for data entry and validation, as well as procedures for back-up and storage in different locations. The benchmark requirements give full details of the various factors to be analyzed when assessing authenticity.

Therefore, the first step for the archivist is to compile the evidence supporting the presumption of authenticity. That evidence must then be measured against the benchmark requirements. If such an evaluation does not produce a high presumption of authenticity, the archivist must try to verify authenticity by other means, such as comparing different versions or copies of the records, examining system audit trails, or interviewing personnel involved in the creation, use, and

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[8] See Appendix 2.

preservation of the records. The resulting assessment may affect the determination of the records' value. The information compiled at this stage is also crucial to understanding and using the records once they have been transferred to the preserver. Future users of the records must know how well founded the presumption of authenticity of the records is, and what information that presumption is based on in order to make their own assessment, long after the fact and when accumulating relevant information is likely to be difficult if not impossible.

Determining Value

The appraiser's assessment of the records' value reflects continuing value and authenticity. However, the impact of authenticity on the archival value of records is not straightforward, and requires some explanation.

For example, let us suppose that an objective of appraisal is to identify records documenting a process or function performed by the records' creator and deemed worthy of long-term preservation. To do so, an appraiser identifies records that will allow the preserver to maintain an accurate reflection of that process or function. If the records creator were performing a function that had a very high impact on society, and its record-keeping practices were very poor, the archivist would most probably still want to preserve evidence of the function by acquiring the appropriate records. Furthermore, if evidence of poor record-keeping practices and of possible willful or fraudulent tampering with the records comes to light during appraisal, that might make it more important to preserve them, in order to attest to that.

Assessment of how authenticity affects the value of electronic records is largely a matter of gathering and evaluating evidence of what has happened to them during the course of their existence prior to the time of appraisal. Of course, there is a prima facie case for presuming records to be authentic if their creator relies on them in the usual and ordinary course of business. Nevertheless, in cases where the records no longer reside in their original environment through, for instance, conversion or migration, it is necessary to determine whether what is being appraised is what originally existed and whether changes to the records have seriously impaired their ability to act as evidence of the activity that generated them. 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 or inaccurate 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. Another case in which authenticity is important is when the value of the records resides in the accuracy of the information they contain, such as with survey or scientific data, rather than in how well they represent the process during which they were created.

Thus, the archivist must assess both the continuing value of the records to their creator and society and the authenticity of the records in order to determine their overall value, and decide how important it is to preserve them or not.

Determining Feasibility of Preservation (A23)

Assessing the value of the records is not enough, however. The appraiser must also determine the feasibility of preserving them as authentic records. More precisely, the appraiser (acting as an agent of the preserver in effect) must decide whether the digital components embodying the essential elements that confer identity and ensure the integrity of the records can be preserved, given current and anticipated capabilities. This determination is based on the same type of information from the records and about the records that is used to assess their value, but it also requires knowledge of the preserver's current and anticipated capability to preserve electronic records. This would include the state of preservation knowledge; hardware and software capabilities; staff expertise; and financial resources. That information is actually provided by the preservation function. The result of this determination is information about the resources and technical capability required for continued preservation of the records.

The activity of determining the feasibility of preserving authentic electronic records breaks down into three phases.

1. The appraiser determines both the record elements containing informational content and those elements that need to be preserved according to requirements for authenticity, as formulated by the Authenticity Task Force's benchmark requirements.
2. The appraiser identifies where these crucial record elements are manifested in digital components of the electronic record that must be preserved.
3. The appraiser reconciles these preservation requirements with the preservation capabilities of the institution that is responsible for the continuing preservation of the body of records being appraised.

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. This information also includes the projected cost of preservation and an indication of whether or not the preserver has the capability to preserve the records in question.

The first activity in determining the feasibility of preserving a body of records being appraised is to determine which record elements are to be preserved to ensure the authenticity of the records. This activity identifies the extrinsic and intrinsic elements of form, as outlined in the benchmark requirements, and the elements of content of electronic records that need to be preserved in order to maintain their authenticity over time. Depending on the design characteristics of the system that produced the records, these elements of form and content may be observable on the face of the record or in metadata associated with the record, or implied in contextual information associated with the records' creation. This contextual information relates to the legal and organizational system in which the creating body belongs; the mandate, structure, and functions of the creating body; the business procedure in the course of which the record is created; the fonds to which the records belongs, and the fonds' internal structure. This internal structure comprises the relationships that link each record incrementally to the previous and subsequent ones, and that convey meaning to the records.

There is other relevant information, in addition to that concerning form and content, that aids in determining the feasibility of preserving authentic electronic records. In particular, the appraiser needs information about the technological context of records in order to understand how they were generated. This would involve gathering and analyzing information about the electronic system itself, the hardware, software, operating system, and the type of files created—for example, word-processing files, image files, and so on. This information is normally gathered as part of the process of compiling information to support the activities of selection, but it is important to note its special relevance in the essentially technical exercise of identifying records elements and digital components.

An archival institution's rules and conventions for appraisal—that is, its appraisal strategies—affect this determination. Indeed, appraisal strategies are taken into consideration at all three stages in determining the feasibility of preservation.

The activity of determining the record elements to be preserved can be illustrated by using one of the InterPARES case studies. The Canadian Intellectual Property Office (CIPO) has a system called TECHSOURCE, which contains a variety of records produced during the patent-granting process. One very important record in the TECHSOURCE system is the patent application, a legal document that constitutes the first step, or act, in the process.

In the act of determining the feasibility of preserving authentic patent applications (or other legal records) maintained in this system, the appraiser would be particularly concerned about the rigour with which the creator met authenticity requirements in their creation. This is typically accomplished through controls embodied in the TECHSOURCE system, and in external procedural controls that were specified during the system's design. These system design requirements constitute the measures CIPO felt were needed to preserve the identity and integrity of the electronic records in the system.

These requirements are often expressed in the intrinsic and extrinsic elements of the records' form. Preservation of these elements of form maintains the records' authenticity over time and across technologies. In the case of a patent application, certain extrinsic and intrinsic elements—such as the application's standard format, and the chronological date and time of receipt by CIPO—must be protected from tampering. In fact, such a requirement is stipulated in the Canadian *Patent Act*. Intrinsic elements relating to the identity of the record, such as the names of the persons involved and expression of the archival bond in the application number, would also be included.

The appraiser would first consider the records from a system such as TECHSOURCE and their various contexts. Then the appraiser would determine that a dispositive record (in which the record represents the act) such as a patent application would contain many of these elements that need to be preserved in order to maintain its authenticity, and therefore its trustworthiness. This is a critical component of appraisal and the result of this analysis would be a list of intrinsic and extrinsic record elements that must be preserved in order to ensure authenticity.

Once the appraiser has identified both the diplomatic elements of the record that confer authenticity *and* the content elements that need to be preserved, the next activity is to identify how these elements are manifested electronically as digital components. In the analog realm, the extrinsic and intrinsic elements are typically united on the medium; however, this is not so with electronic records. The identified elements in the electronic realm may be manifested in various ways, in what the project calls *digital components.* As defined by the InterPARES Preservation Task Force, a digital component is "a digital object that contains all or part of the content of an electronic record, and/or metadata necessary to order, structure, or manifest the content, and that requires specific methods for preservation of one or more electronic records, and that has specific methods of preservation and reproduction." The concept of digital object has its roots in the object-oriented paradigm, whereby the characteristic of discernment of such an object is that it has one or more particular methods associated with it, such as presentation software. This identification of digital components is made using previously ascertained information about the record elements to be preserved, along with information already gathered about the record's technological context.

For instance, in CIPO's TECHSOURCE system, standard correspondence generated in the course of the patent-granting procedure is produced by combining standard templates containing formulaic language with attribute information from various tables in the relational database management system. Each of these, the templates and the attribute information, are separate digital objects, or components. In the case of the former, word-processing software is necessary to invoke the template object and in the case of the latter, database software is necessary to understanding the table and relationships represented by a particular instance of an attribute. The template digital objects contain extrinsic elements of form conferring authenticity (e.g., English and French versions of the formulaic correspondence language). The digital objects representing the table-derived attribute information contain security privilege and work-flow information that guarantee intrinsic elements of form by ensuring that only someone with proper authority can issue a particular type of correspondence. In order for the archives to preserve authentic electronic records over time, the appraiser must be aware of what these components are, what records elements are contained therein, and the means by which the elements can be united to reproduce the record in a comprehensible form.

The final stage of determining the feasibility of preserving authentic electronic records is a reconciliation of the record components' preservation requirements with the archives' preservation capabilities. The question is: "Can the components that manifest the informational and authenticity elements be preserved, in light of current and/or anticipated future capabilities of the archives?" Simply put: "Can the preserver preserve these digital components?" This is answered by knowing the preserver's current and anticipated capability to preserve electronic records. This information includes the state of preservation knowledge and the institution's hardware/software capabilities, as well as practical matters of staff expertise and financial resources available for preservation services.

The attempt to reconcile preservation requirements with preservation capabilities produces two bodies of information that inform the appraisal decision. The first body of information concerns the digital components to be preserved; it includes information that would explain where records elements that are vital for maintaining authenticity are manifested in the (potentially various) components of the electronic records, as well as the technical information (e.g., invocation methods) about those components that would be required for subsequent preservation activities. To use the TECHSOURCE example, the first type of information would include the identification of specific tables within the records and database management system (RDBMS) that correspond to specific elements of form conferring both content and authenticity. The second body of information would indicate, for example, what type of viewer software would be needed to view the system's scanned images or what information in the image file headers could be exploited for retrieval purposes. The feasibility of preserving a given body of authentic electronic records would be based on current or anticipated finances and technical capabilities. Equipped with this information as well as the valuation information articulated in the value assessment activity, the ultimate appraisal decision and documentation supporting it is then made in light of the preserver's appraisal strategies.

Making the Appraisal Decision

If the assessment of value determines that records are not worthy of long-term preservation, the appraisal decision becomes easy. In all other cases, however, the determinations of value and feasibility come together in determining the appraisal decision. We could describe this as balancing what the appraiser would like to preserve against what the preserver is capable of preserving and can afford to preserve. However, that would be simplistic. The balance between value and feasibility rests on an exercise of judgement, on a case-by-case basis. For example, an appraiser could be confronted with a situation where preserving records would be either extremely difficult for technical reasons, or would entail considerable costs. But this does not necessarily tip the decision against preserving the records. If the records were of extraordinary importance or their preservation were mandated by law, the archivist might look for either alternative sources of funding or another preserver, or come to an arrangement by which the creator would preserve the records—at least for a certain period of time. Nevertheless, preservation capabilities do come into play, because resources are not infinite, and choosing to preserve any given body of records often affects decisions made about other records.

The outcome of this decision making is of course an appraisal decision, which sets out the disposition of the records. The decision is made up of two parts. First, it must list *what* must be transferred to the preserver, or disposed of in other ways (destroyed, transferred to an entity other than the preserver, etc.). The list is laid out at a level of detail appropriate for someone to be able to carry out the disposition. Depending on the type of electronic records, and the precision of the records management system, this could mean a high-level description of records (e.g., based on their functional context or their classification), a list of record elements, or a detailed list of digital components. Ultimately, however, persons effectively carrying out disposition need precise instructions and a list of digital components.

In addition to the list of records and digital components, persons responsible for carrying out the disposition of records must be provided with information specifying *how* and *when* disposition must be effected. That includes the responsibilities of each party, and interim measures such as a monitoring schedule. The terms and conditions of transfer specify the conditions of the disposition the records, as well as more general clauses that apply to all records (such as rules about the frequency of monitoring). These general clauses are established as part of the management function in the form of disposition rules and procedures.

If all or some of the records appraised must be preserved, the content of the appraisal decision, as well as any further relevant information about the records' technological environment, must be included in an information package for people responsible for continuing preservation.

Finally, the appraisal process must produce documentation explaining and justifying the appraisal decision. It characterizes the various contexts of the records that were relevant to the decision,

explains the methodology and criteria used, details the research method, presents the assessments of value and of feasibility, and outlines the rationale for the decision. It should make clear which records were preserved, and which were not, out of the universe of records created. This documentation is vital for accountability purposes, on the one hand, and so that future users of the records understand the records, on the other. In fact, it constitutes permanent records of the preserver that must be accessible to anyone wanting information about the disposition of records. Information about appraisal decisions is also a crucial feedback mechanism for those managing the selection function (especially in devising appraisal strategies and methodologies), and for other archivists engaged in appraisal.

<u>Recommendations on Appraisal</u>
1. Appraisal is a knowledge- and research-intensive activity. Appraisers must be provided with the proper training, tools, information, support, and resources to conduct the necessary research.
2. Accurate and thorough documentation of the appraisal process in its various phases and outcomes is essential. Information about the appraisal decision, as well as about the appraised records themselves, should be considered as an outcome of appraisal in its own right, as much as the appraisal decision itself. That information is required for further archival functions—such as preservation, arrangement, and description—to be performed adequately.
3. The preserver should develop an interview protocol (along the lines of the InterPARES *Case Study Interview Protocol* or *CSIP)* to ensure that the relevant information is compiled to determine the records elements that need to be preserved.[9]
4. The preserver should use the *Requirements for Assessing and Maintaining the Authenticity of Electronic Records* as the conceptual basis for its assessment of the grounds for presuming records to be authentic and for its identification of records elements that need to be preserved to ensure authenticity.

Monitoring Appraised Electronic Records (A0, A3)

<u>Relationship to Other Activities</u>
Monitoring appraised electronic records and the activities associated with doing so are necessary to ensure the continuing preservation of the appraised authentic electronic records. This activity occurs conceptually after an appraisal decision is made and before disposition is undertaken. This placement recognizes that any decision is fixed in time, place, and circumstance. Appraisal decisions need to be revised as required, to ensure that the information about the appraised electronic records is still valid, that changes to the records and their context have not adversely affected their identity or integrity, and that the details of the process of carrying out disposition are still workable and applicable to the records.

Logically, the appraisal decision should be monitored to ensure that time and its changes are attended to when disposition actually takes place. Disposition may be immediate upon reaching an appraisal decision, but it might not take place for some time. The appraiser, acting as a monitor of electronic records earmarked for continued preservation, fulfils two important functions. The first is to see that the appraisal decision, the detailed information about the appraised electronic records, and the terms and conditions for transfer required by the preserver reflect contemporary realities. Many changes to the records and their context will require relatively minor revisions to appraisal documentation and to the terms and conditions of transfer. 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 appraisal. This kind of "redoing" of appraisal should be distinguished sharply from reappraisal in the sense of second-guessing the valuation of the

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[9] The *CSIP* is available on the InterPARES Web site at <http://www.interpares.org/reports.htm>.

original appraisal. It is redoing in the sense that one has to begin afresh to appraise what is in fact a new situation of records of a particular creator, the former manifestation of which has in fact ended. Describing this redoing as "a new appraisal" would not be inaccurate. However, the need to do so is very likely to go unnoticed, with perhaps disastrous consequences, unless monitoring is part of the selection process.

The Framework for Monitoring

Monitoring takes place within a framework established by specific appraisal strategies and acts upon the appraisal decision in the light of the circumstances of the records and their contexts. The appraiser is more or less constrained by the degree to which the appraisal decision is, for working purposes, embodied in statements of terms and conditions and other information about the appraised electronic records. Among other things, this information should identify the record(s) that is(are) selected for preservation; provide technical information about the electronic system and the digital and record components in that system; specify a schedule for copying, transfer, or other type of process that allow an authorized disposition to take place; and confirm these actions by an appropriate attestation from the authority with the competence to dispose of records officially.

Monitoring Tasks

One of the tasks of monitoring is to see that scheduled dispositions are carried out. The appraiser doing the monitoring keeps up-to-date information about the appraisal decision, the appraised records, and the terms and conditions of transfer so that, when it comes time to make a disposition, there are no unforeseen problems or difficulties. It is especially important to keep up-to-date information on how records are manifested in the system; how to destroy those records that do not have to be preserved; and how to acquire, copy, format, and otherwise prepare and package records for continuing preservation.

Effective monitoring ensures that the appraisal decisions and the information about the appraised electronic records meet the needs of carrying out disposition and preservation. Adjustments or minor change to the electronic records—either at the level of the record-keeping system, or in the broader contexts of document, provenance, or technology—may have a direct bearing on the implementation of the initial disposition of electronic records. Such alterations or adjustments in the course of the ordinary business of the creator also may have implications for subsequent dispositions. Monitoring, therefore, regularly confirms that the decision and its related terms and conditions can be and are implemented. Updates to the appraisal decision and associated information about the appraised electronic records will constantly be available to the persons carrying out disposition and preservation activities.

Major alterations to the records, or significant changes in the system, its platform, and/or the context of its records might alter the circumstances of the records sufficiently that the original assessment of value and determination of feasibility are no longer sound grounds on which to continue the selection of electronic records for continuing preservation. Another way of looking at it is that monitoring will result in a recommendation to initiate a transfer and redo the appraisal only when major changes take place that cannot be addressed by adjustments to the terms and conditions in the original or updated appraisal decision.

Relationship to Real Situations

Although the previous discussion has been explicit about the conceptual logic connecting activities of the monitor to appraisal and the carrying out of disposition, the model also implicitly suggests related practical steps for the real tasks of selecting electronic records for continuing preservation. The model does not prescribe specific policies, procedures, strategies, rules, conventions, or criteria, nor does it describe the detailed contents of any of these. However, the relationship of parts, the categories of control, the nature of facilities and resources, and the types of inputs and outputs required for action suggest what specific information the selector needs to achieve the continuing preservation of electronic records for reference with their qualities of authenticity identified, maintained, and preserved intact.

Monitoring is essentially a matter of the entity responsible for preservation keeping in close contact with the creator to keep track of changes to its records system. The realization of duties, roles, and responsibilities is a practical matter for organizations to decide. A large national archives, for example, with major responsibilities for the preservation of records for cultural ends, and perhaps with defined roles in the overall management of recorded information resources, will have a very different arrangement of responsibilities compared with that of a multinational private corporation that views continuing preservation as an aspect of its business needs alone. Whatever the goal of continuing preservation, monitoring decisions to ensure that they are implemented is a key activity for any organization.

Those who monitor electronic records must have access to all the components of the appraisal decision. These include information about the electronic records appraised for preservation, other related information of a contextual nature, and all details of the preserver's system, platform, and capabilities. In addition, documentation must be revised to ensure that changes made to the initial terms and conditions as well as recommendations to redo the appraisal are understandable, accessible, and preserved. A fully developed monitoring activity will integrate the continuing and natural changes to records and the systems in which they are kept with the preserver's need to know of changes. Monitoring ensures that the operation of the selection function meets the needs of both the creator and the preserver over the long term.

Recommendations on Monitoring
1. The preserver should set guidelines for the roles and responsibilities of monitoring appraised electronic records and develop work flows to ensure smooth operation of this activity.
2. The appraisal strategy and disposition rules should take account of the needs of monitoring appraised records.

Carrying out Disposition of Electronic Records (A4)

To carry out the disposition of electronic records is to effect disposition of the electronic records according to the appraisal decision. This activity is made up of three distinct activities: prepare electronic records for disposition; prepare electronic records for transfer to the responsibility of the preserver; and transmit electronic records to the preserver. The appraisal decision, and the terms and conditions under which there is this transfer of responsibility for preservation from the creator to the preserver, set out what the disposition is to be, as well as who will do what, and when. The disposition rules and procedures developed in the management of the selection function govern the process of disposition of records selected for preservation and records not selected for preservation. Carrying out disposition is a three-step process.

Preparing Electronic Records for Disposition

The first step, preparing electronic records for disposition, includes copying and, if necessary, formatting those selected for preservation so as to prepare them physically for transfer; and/or, if this falls to the responsibility of the preserver, taking those records not selected for preservation and preparing them for destruction, alienation to another entity, or such other disposition as has been determined in the appraisal decision. The inputs to this activity are the electronic records themselves and updated information about the appraised electronic records. This includes the information necessary for disposition and continuing preservation of electronic records, including the terms and conditions of transfer. Updated information will result from the monitoring activity that keeps track of the changes to electronic records in the period since the appraisal decision was first made. During this step in the process, records eligible for disposition are identified and prepared for transfer or destruction.

Therefore, two of the outputs of this activity are electronic records selected for preservation and electronic records *not* selected for preservation. Electronic records not selected for preservation are identified for destruction or disposition to an entity other than the one responsible for continuing preservation. Those electronic records selected for preservation are copied and formatted for transfer to the entity responsible for continuing preservation. A third output of this

activity is information about disposition. This is information about the quantity and quality of records selected for preservation and records not selected for preservation, and about the cost of disposition of electronic records, utilized for management purposes. As an output of the appraisal process, this information accompanies the decision made: transfer of electronic records, or destruction (or otherwise).

Preparing Electronic Records for Transfer

The next step, one that either the creator or preserver may take or that they may take together, is to associate records selected for preservation with the necessary information for their continuing preservation, including the terms and conditions of transfer, identification of the digital components to be preserved, and associated archival and technical documentation needed for their treatment. The relevant information should have already been 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.

There are two outputs from this activity: the electronic records themselves, prepared for transfer, and information about the electronic records prepared for transfer. Electronic records are copied and, if necessary, formatted for transfer, and associated with the information necessary for transmittal and continuing preservation. Information about the electronic records prepared for transfer spells out the terms and conditions of transfer of electronic records, and identifies the digital components to be preserved together with the archival and technical specifications necessary to guide continuing preservation.

Transmitting electronic records

The third step, the final activity of carrying out disposition, is to transmit the records selected for preservation—along with the accompanying information necessary for continuing preservation—to the office responsible for the preservation function.

The outputs of this activity include information about transferred electronic records and the transfer of electronic records selected for preservation. Information about transferred electronic records constitutes the record or records providing the information about electronic records necessary to maintain them continuously in authentic form, including the terms and conditions of transfer. The second outcome of the transmit function is the actual transfer of electronic records selected for preservation. These electronic records are copied and, if necessary, formatted for transfer and sent to the office responsible for the preservation function.

Recommendations on disposition
1. As part of its disposition rules, the preserver should work out a standard protocol setting out the roles and responsibilities of the creator and the preserver in carrying out disposition of electronic records.

2. The preserver should develop a standard format for recording the information necessary for continuing preservation that is associated with transfers of electronic records.

Relationship of Findings to Other Research

Although the work to develop a picture of the process of selection of authentic electronic records builds on the general literature on archival appraisal, and on the specific literature on appraisal of electronic records as reflected in the literature review, no other research we know of has delved deeply into the questions we set out to answer. We believe that the picture of appraisal of electronic records afforded by the model we have developed provides the most extensive and detailed account of the process of selection currently available.

The most important relationships of the work of the Appraisal Task Force is of course to the work of the Authenticity Task Force and Preservation Task Force of InterPARES, the main lines of which we have indicated. In this regard, it is worth reiterating that our work depends to a very great extent on the work of the Appraisal Task Force, in particular on its template for analyzing electronic records and its conceptual requirements for assessing authenticity. Readers of this report are encouraged to follow the explanation of the template and conceptual requirements in the "Authenticity Task Force Report."

Conclusion

The task force set out to determine whether the theory and methodology of appraisal for electronic records differs from that for traditional records, and what role the activities of appraisal play in the long-term preservation of electronic records. To summarize the ways in which appraisal and disposition differ for electronic records and traditional records, it will be instructive to look again at the original research questions in light of the findings, particularly in light of the knowledge encapsulated in the model of the selection function.

1. What is the influence of digital technology on appraisal?

Some of the influences of the digital environment on appraisal simply heighten tendencies already evident in the traditional environment, while others are new.

The need to monitor or keep track of changes in the record-keeping environment is not unknown in the traditional environment. The functions and activities of creators, and their internal organization and procedures—including documentary procedures—all change over time, with the result that appraisal decisions must be revisited and amended to take account of these changes. By contrast, in the digital environment, changes in the system generating the records can present at least three scenarios.

In the first scenario, relatively minor changes to a system may lead to a relatively inconsequential revision to an appraisal and information about appraised electronic records. That is, one can live with the main lines of the original appraisal and determination of disposition. In the second, significant changes in the technological context may require one to adjust the appraisal to take account, for instance, of new work processes and their automation or technological advances. In the third, drastic changes, such as introduction of a completely new system, may lead the appraiser to initiate a disposition under terms of the existing appraisal and then, of course, a "redo" of the appraisal of records in the new system when it is determined one should be made. Because much data in the digital environment is dependent for its meaning on an understanding of that environment, deciding the disposition of records in systems about to become outmoded is likely to be an important tactic. In the traditional environment, records committed to paper did not so easily lose important aspects of the original context of creation, even if they migrated into a new record-keeping environment. Nevertheless, it is probably fair to say that monitoring change and determining its effects on selection decisions is nothing new. The need for it is just more pressing in the digital environment.

Something along similar lines can be said about the need to appraise records early in their life, when the appraiser can see a fully operational live system. In fact, modern records schedules, which in effect constitute a series of disposition decisions class by class, are often created before records are created. The difficulty in the digital environment, one discussed widely in the literature reviewed by the task force (see Appendix 3), is that designers of digital systems, particularly in the early years of office automation, paid little or no attention to questions of the disposition of records. It was this fact, rather than any inherent characteristic of the digital environment, that pushed archivists to suppose that appraisal capability had to be built into the design of systems.

The need to appraise early in the digital environment is, by contrast, vital for quite another reason. Information about the technological context, much of it now contained in the systems themselves, cannot be found or reconstructed, we know from sad experience, even a short time after systems have reached the end of their life. It is exceedingly difficult to assess the authenticity of such records, determine the feasibility of preserving them, and understand them in the future, without this information about the technological context. Once again, archivists are familiar with the difficulties of having to construe the context of the records with little else to speak of it but the records themselves. This is hardly an argument for expecting the acuity of Jean Mabillon (the Benedictine Monk who laid out the concepts and tenets of diplomatics in the seventeenth century) in all future users of electronic records where information about their technological context is concerned. Rather, considerable information about the technological context of the records needs to accompany them through time in order for the records to be intelligible in anything like an acceptable fashion in years and centuries to come. It is a principal task of appraisal to gather this information so that it can be associated with the records.

These somewhat shaded and not entirely novel influences of the digital environment are quite different in kind from the influences on two aspects of appraisal of electronic records: assessing their authenticity and determining the feasibility of their preservation. Archivists have rarely assessed authenticity overtly and as a matter of gathering evidence to support a presumption of authenticity, such as we recommend be done during appraisal using the benchmark requirements. Those requirements spell out evidence derived in large measure from analysis of the technological context (of the kind spoken about in the previous paragraph) but it is with the end of gauging the play of authenticity in the overall determining of value of electronic records. It is precisely because the digital environment is so frail that this needs to be done. Even less often have archivists gone the extra length, during appraisal, to verify the authenticity of records. Both assessment and verification along the lines recommended in the *Requirements for Assessing and Maintaining the Authenticity of Electronic Records* are likely to become, and should become, the rule rather than the exception.

Still, the *pièce de résistance* of this particular recounting of influences may be found in the activity of determining feasibility. It is here, particularly in determining how record elements are manifested in the digital environment and in identifying digital components to be preserved that the appraiser must be immersed in the technical details of the digital environment. In some cases, it may be surmised that, *for reasons of the character of the digital environment*, it will be determined that records cannot be preserved or not in authentic form. Could there be a greater influence?

2. What is the influence of retrievability, intelligibility, functionality, and research needs on appraisal?

The task force did not investigate these questions directly. It is implicitly clear that part of the exercise of determining the feasibility of preserving authentic electronic records is to ensure that the preserver has the capability to read and retrieve or present them in a form that does not compromise their identity or integrity. We have little to say beyond what is implicit in the final report of the Authenticity Task Force about the question of functionality. Some researchers have suggested that proper preservation of electronic records means perpetuating the functionality of the system creating the records. We have not worked upon the assumption that this is necessary if the message the record was meant to communicate is preserved and its identity and integrity

are evident. However, the means by which records are presented to researchers is really dependent on preservation capabilities, not on appraisal as such. In any given case, though, should the capability exist to replicate aspects of the functionality of the originating system, the appraiser would naturally take that into account.

3. What are the influences of the medium and the physical form of the record on appraisal?

As the Authenticity Task Force has determined that the medium is in fact part of the technological context and that not all aspects of physical form necessarily need to be reproduced in order to have authentic electronic records, these questions are no longer apposite. They have been proven to be the wrong questions to ask.

4. When in the course of their existence should electronic records be appraised? Should electronic records be appraised more than once in the course of their existence, and, if so, when?

These two questions are addressed together because they both concern the timing of appraisal. In fact, it is not possible to answer the first with a single answer. For good reason, the task force has assumed that records must exist before they can be appraised. It is indeed possible to build records retentions scheduling into the design of electronic record-keeping systems, but until records are actually created in the system and can be examined, questions around their authenticity and the feasibility of preserving them cannot adequately be answered. Of course, it might be the case that scheduling is regarded as the first step in the appraisal process, when continuing value alone is judged. This initial step would then be followed by assessment of authenticity and determination of feasibility, most likely at the time that a transfer of records to the preserver is anticipated.

The ideal scenario as we see it is that an initial appraisal is made, preferably when records can be seen "live" in the system that generated them, and the applicability of that appraisal is regularly monitored to take into account changes in the records and their contexts, with the last monitoring being at or near the time of transfer (disposition). So, yes, electronic records must be appraised more than once in the sense that the dynamic nature of the digital environment means the assumptions and judgements of the appraisal as it exists at any point in time must be validated before disposition action is taken. In short, the idea of monitoring is the answer to questions about the timing of appraisal of electronic records that have been raised in the literature. For a full discussion of opinion on this question, see the literature review in Appendix 3.

5. Who should be responsible for appraising electronic records?

As already discussed, one of the basic assumptions of the research is that appraisal is part of the primary responsibilities of the preserver, although obviously there are nuances, as already discussed, to the way in which responsibility may actually play out in a given administrative setting. We believe that our work buttresses this assumption in several ways.

The preserver has the long term and the interests of entities other than the current creating body in mind when appraising records. The assessment of authenticity and the documentation generated and preserved during that assessment are actions associated with the preservation function. This assessment and its documentation are preserved for the benefit of future users (whether inside or outside the creating body) wishing to establish the grounds for the presumption of authenticity of the records.

Another argument follows the logic of determining the feasibility of preserving electronic records. If appraisal is not undertaken by the preserver and with the current and expected future capabilities of the preserver in mind, there is the chance that appraisal and preservation will simply be disconnected. It is hard to imagine that the preserver should accept decisions about

what it must preserve without having responsibility for making the decision. The methodology of appraisal implied in the model leaves ample room for the interests of the organization creating the records to be taken into account.

Finally, we hope that the complexity of appraising electronic records such as we have indicated makes it abundantly clear that appraisal requires considerable professional expertise to perform. Because of this, it seems unreasonable to expect that anyone other than persons devoted to the primary task of preservation should be saddled with the responsibility to appraise electronic records.

6. What are the appraisal criteria and methods for authentic electronic records?

The methodology explicit and implicit in the model is our answer to the aspect of this question about methods. The only criteria that, in our view, can be established to cover all situations are, first, the requirements for assessing authenticity as part of assessing the value of electronic records; and, second, the concepts that have been developed for determining the record elements to be preserved and for identifying the digital components to be preserved as part of determining the feasibility of preservation. As we have explained, we did not regard it as part of our charge to establish criteria governing assessment of continuing value, because assessing continuing value is so sensitive to the entire context in which appraisals are made.

We are also of the view that we cannot go beyond the conceptual requirements developed by the Authenticity Task Force for assessing authenticity. They in fact provide sufficient criteria for assessing authenticity and for determining the records elements that are vital for the identity of electronic records. Although we did not take it as part of our charge to develop criteria guiding the determination of continuing value, we do recognize that the appraisal strategies of preservers should include criteria to apply in assessing continuing value.

Nevertheless, the model of the activities of selection shows that appraisal is a vital first step in long-term preservation of authentic electronic records in innumerable ways. It gathers and synthesizes essential information and evidence to ensure the authenticity of electronic records and to set in motion their disposition and long-term preservation.

Summary of Recommendations

1. Appraisal is a knowledge- and research-intensive activity. Appraisers must be provided with the proper training, tools, information, support, and resources to conduct the necessary research.
2. Accurate and thorough documentation of the appraisal process in its various phases and outcomes is essential. Information about the appraisal decision, as well as about the appraised records themselves, should be considered as an outcome of appraisal in its own right, as much as the appraisal decision itself. That information is required for further archival functions—such as preservation, arrangement, and description—to be performed adequately.
3. The preserver should develop an interview protocol (along the lines of the InterPARES Case Study Interview Protocol or CSIP) to ensure that the relevant information is compiled to determine the records elements that need to be preserved.
4. The preserver should use the Requirements for Assessing and Maintaining the Authenticity of Electronic Records as the conceptual basis for its assessment of the grounds for presuming records to be authentic and for its identification of records elements that need to be preserved to ensure authenticity.
5. The preserver should move set guidelines for the roles and responsibilities of monitoring appraised electronic records and develop work flows to ensure smooth operation of this activity.
6. The appraisal strategy and disposition rules should take account of the needs of monitoring appraised records.

7. As part of its disposition rules, the preserver should work out a standard protocol setting out the roles and responsibilities of the creator and the preserver in carrying out disposition of electronic records.
8. The preserver should develop a standard format for recording the information necessary for continuing preservation that is packaged with transfers of electronic records.