Preserving Digital Information: Draft Report of the Task Force on Archiving of Digital Information commissioned by The Commission on Preservation and Access and The Research Libraries Group

Executive Summary

In December 1994, the Commission on Preservation and Access and the Research Libraries Group created the Task Force on Digital Archiving. The purpose of the Task Force is to investigate the means of ensuring "continued access indefinitely into the future of records stored in digital electronic form." Composed of individuals drawn from industry, museums, archives and libraries, publishers, scholarly societies and government, the Task Force was charged specifically to:

- "Frame the key problems (organizational, technological, legal, economic etc.) that need to be resolved for technology refreshing to be considered an acceptable approach to ensuring continuing access to electronic digital records indefinitely into the future.
- "Define the critical issues that inhibit resolution of each identified problem.
- "For each issue, recommend actions to remove the issue from the list.
- "Consider alternatives to technology refreshing.
- "Make other generic recommendations as appropriate" (see Appendix A for the full charge).

The document before you is a work in progress resulting from the initial deliberations of the Task Force. The Task Force invites you to contribute to its final report by commenting on this work in progress (see below).

In taking up its charge, the Task Force on Archiving of Digital Information focused on materials already in digital form and recognized the need to protect against both media deterioration and technological obsolescence. It started from the premise that migration is a broader and richer concept than "refreshing" for identifying the range of options for digital preservation. Migration is a set of organized tasks designed to achieve the periodic transfer of digital materials from one hardware/software configuration to another, or from one generation of computer technology to a subsequent generation. The purpose of migration is to retain the ability to display, retrieve, manipulate and use digital information in the face of constantly changing technology. The Task Force regards migration as an essential function of digital archives.

The Task Force envisions the development of a national system of digital archives, which it defines as repositories of digital information that are collectively

responsible for the long-term accessibility of the nation's social, economic, cultural and intellectual heritage instantiated in digital form. Digital archives are distinct from digital libraries in the sense that digital libraries are repositories that collect and provide access to digital information, but may or may not provide for the long-term storage and access of that information. The Task Force has deliberately taken a functional approach in these critical definitions and in its general treatment of digital preservation so as not to prejudge the question of institutional structure.

The Task Force sees repositories of digital information as held together in a national archival system primarily through the operation of two essential mechanisms. First, repositories claiming to serve an archival function must be able to prove that they are who they say they are by meeting or exceeding the standards and criteria of an independently-administered program for archival certification. Second, certified archives will have available to them a critical fail-safe mechanism. Such a mechanism, supported by organizational will, economic means and legal right, would enable a certified archival repository to exercise an aggressive rescue function to save culturally significant digital information. Without the operation of a formal certification program and a fail-safe mechanism, preservation of the nation's cultural heritage in digital form will likely be overly dependent on marketplace forces, which may value information for too short a period and without applying broader, public interest criteria.

In order to lay out the framework for digital preservation that it has envisioned, the Task Force provides an analysis of the digital landscape, including the aspects of digital information and the stakeholder interests that affect preservation. The Task Force then introduces the principle that responsibility for archiving rests fundamentally with the creator or owner of the information and that digital archives may invoke the fail-safe mechanism to protect culturally valuable information. The report explores in detail the roles and responsibilities associated with the critical functions of managing the operating environment of digital archives, strategies for migration of digital information, intellectual property, and costs and financial matters.

The report concludes with a set of recommendations for the Commission on Preservation and Access and the Research Libraries Group to take the following actions, either separately or together and in concert with other individuals or organizations as appropriate:

1. Solicit proposals from interested archives around the country and provide coordinating services for selected participants in a cooperative project designed to place information objects from the early digital age into trust for use by future generations.
2. Secure funding and sponsor an open competition for proposals to advance digital archives, particularly with respect to removing legal and economic barriers.

3. Foster practical experiments or demonstration projects in the archival application of technologies and services, such as transaction systems for property rights and authentication mechanisms, which promise to facilitate the preservation of the cultural record in digital form.
4. Coordinate the appropriate organizations and individuals in the development of standards, criteria and mechanisms for identifying and certifying repositories of digital information as archives.
5. Engage actively in national policy efforts to design and develop the national information infrastructure to ensure that longevity of information is an explicit goal.
6. Sponsor the development of a white paper on the foundations needed in intellectual property law to support the aggressive rescue of endangered digital information through an effective fail-safe mechanism.
7. Engage representatives of professional societies from a variety of disciplines in a series of forums designed to elicit creative thinking about the means of creating and financing digital archives of specific bodies of information.
8. Commission follow-on case studies to identify current best practices and to benchmark costs in one or more of the following areas of archiving culturally valuable digital information: (a) storage of massive quantities of information; (b) use of metadata for digital preservation; and (c) migration paths.

Given the analysis in this report, its findings and recommendations, we expect that the best use of the work of the Task Force will ultimately be to heighten awareness of the seriousness of the digital preservation problem, its scope and complexity-- and its manageability. There are numerous challenges before us, but also enormous opportunities to contribute to the development of a national infrastructure that positively supports the long-term preservation of digital information.

We believe that the dialogue that grows from the circulation of this draft will sharpen its content and help identify additional, practical and affordable ways to contribute to the information infrastructure. To provide a means for you to participate in the dialogue, The Task Force listserv (archtf-l@yalevm.cis.yale.edu) is now open. You may subscribe by sending the following message to listserv@yalevm.cis.yale.edu:

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subscribe archtf-l
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Once subscribed, you can submit your comments to the list. Otherwise, you may address your comments to either one of us. If you have comments, please communicate them to us by October 31, 1995. We expect to reconvene the Task Force shortly thereafter to draft the final report.

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