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Moving Forward

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Moving Forward

By Carol Kussmann, Minnesota State Archives

The Minnesota Historical Society/State Archives has been involved in many grant projects over the years that addressed electronic records in one way or another. This paper briefly describes how the State Archives transferred lessons learned from one such project into developing a workflow that addresses the preservation of digital materials.

Background

From January 2008 to December 2011, the Minnesota Historical Society/State Archives was the lead partner on the Library of Congress's National Digital Information Infrastructure and Preservation Program (NDIIPP) grant titled "A Model Technological and Social Architecture for the Preservation of State Government Digital Information." Working with partners in 10 states, this grant focused on learning and exploring ways to preserve and provide access to government digital information, including testing preservation repositories.

The Center for Archival Resources on Legislatures¹ was created as the final product of the grant and pulls together research information and other resource documents produced and collected during the grant period. The Resource Center is divided into four categories: Foundations, Access, Preservation, and Authentication, which will help to explain records and responsibilities, discuss options for providing access, and examine information about methods and tools for preservation as well as authentication of digital materials.

Unfortunately, forward movement after completion of a grant often stalls or slows down due to lack of funding, staff reassignments, and other institutional priorities. However, if one thing was learned from the project, it is that to better preserve digital materials, immediate action must be taken. Digital materials cannot be put into a box and placed on a shelf to be addressed at a later, more convenient date.

So the question was how to move forward.

First Steps: Documentation and Inventory

Knowing that the State Archives was not able to currently support a preservation repository like the ones tested during the NDIIPP project, digital preservation issues that could be addressed were. On the administrative side, documenting requirements for a digital preservation environment and drafting a digital preservation frame-

work were the foci. As for addressing the digital content, identifying what the State Archives had and determining how it was going to be cared for were the starting points.

Research and practical hands-on experience with preservation repositories during the NDIIPP project assisted the State Archives in drafting a list of requirements for a digital preservation environment. Requirements centered on functions such as ingest, preservation activities, authentication, security, access, data management, search functionality, metadata collection and recording, reporting, documentation, and system administration. Collaboration with both internal and external stakeholders was done to understand a variety of use cases and develop a sound but practical set of requirements. As they stand, the requirements help keep the State Archives focused on key digital preservation activities.

In addition to documenting the requirements for a digital preservation environment, a digital preservation policy framework is under development. This document will be used to educate others within the organization about the importance of digital preservation; touching on the ever-changing environment and how it is important to move forward *now*. A key component of the document will be to define roles and responsibilities across the organization as there is a need for a systematic, consistent approach to managing digital content. The digital preservation policy framework will help define this.

To address the digital content itself, a full-time employee was dedicated to digital preservation activities.

The first step was to conduct an inventory of the digital files after which decisions were made on how to proceed. The inventory helped answer questions such as how much digital content was in the State Archives and Manuscript collections, what file formats they were in, what types of collections they represented, and what information about the records should be collected to assist with long-term management of the files. After the inventory was complete, the State Archives was in a much better position to develop a preservation plan. Using Excel, an initial preservation plan was drafted that recorded the information that needed to be captured and documented for the long-term management and preservation of the files.

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By working through the digital backlog one collection/record series at a time, the State Archives was able to see where the initial plan worked and where it needed to be modified. As new types of record series or content types were addressed, changes were immediately made to the entire preservation plan if necessary. One major change was moving from using Excel to document the preservation plans to Microsoft Access, as fields could more easily be sorted and filtered and customized reports could be created.

A manual was created that documents the entire workflow from content appraisal to conducting an annual review of the preservation plan. The manual includes instructions for completing a preservation plan as well as step-by-step documentation on how to collect metadata using various programs. It is important to keep in mind that the entire workflow is important, not just the preservation-specific activities.

The Process

Appraising content should always be the first step as it may not be feasible or necessary to preserve all of the digital content that exists. The manual prompts thinking from various angles during the appraisal—for example: is the content unique? Is the information captured elsewhere in the collection? Can the records be printed? Is there a legal mandate to preserve the content? Are the file formats well supported? What is the likelihood of being able to preserve the files over time? If, after appraisal, the content will be preserved in digital form, the fields of the preservation plan are then filled out, and programs run against the files to collect information including technical metadata and checksum values.

Working from desktop computers and sharing bandwidth with the rest of the institution to access files on remote servers, staff uses various programs to manually collect information about the files that a digital preservation system would most likely do automatically. Some programs capture file properties including file size, file format, size and number of files in a folder, date created, date last modified, and directory structure. Other programs are run to create baseline checksum values and, if necessary, programs are used to perform file format migrations/transformations. For more information on various programs reviewed but not necessarily used by the State Archives, please see www.mnhs.org/preserve/records/tools.htm.

The manual processes of collecting metadata and checksum values and of creating a preservation plan for each collection

or record series that contains digital materials are time-consuming and require a lot of attention to detail. At the current rate that it is receiving digital records, the State Archives has been able to keep up with demand, although that may not be the case in the future. However, this process has proven to be immediately valuable to records management and file preservation. In one instance, comparing the number of master files to the number of access files revealed that 20,000 master files were missing—these were immediately recovered from a tape backup. The process can also identify duplicate files; identifying and removing identical files is a way to free up server space. In one collection alone, more than 50 gigabytes of duplicate files were removed. Working through the collection on an individual basis has led to better understanding of content and assisted with defining the workflow process.

Next Steps

As part of the workflow, the preservation plan for each collection/record series undergoes an annual review. The review process verifies the authenticity of the files, evaluates the preservation risk of file formats, requests additional backups, documents any changes, and supports long-term file preservation/management.

As the State Archives staff works to inform others about the importance of digital preservation, the manual that was created is being used to train other staff members on how to care for their digital assets. State and local government agencies often contact the State Archives to discuss the creation and retention of digital records, but currently only a handful of record sets in the State Archives collection contain a large amount of digital records. With the increased use of born-digital records, this is expected to change over time, and when it does, the State Archives' forethought and preparation means it will be ready with a method to address digital records. That is not to say that things will always go smoothly or that the current practice is scalable for the long term. But in the ever-changing landscape of digital preservation/records management, archivists must be willing to change to keep up with evolving technology and standards and to keep moving forward.

Notes

1. "Center for Archival Resources on Legislatures," Minnesota Historical Society, last modified February 28, 2012, www.mnhs.org/preserve/records/legislativerecords/carol/.