GUIDING A CAMPUS THROUGH THE TRANSITION TO A PAPERLESS RECORDS SYSTEM

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ABSTRACT

The "paperless office" concept has been around for decades, and many have cited that the electronic office has instead increased the amount of paper produced. Case studies have shown that a successful "paperless" system requires motivation, ease of use, and cost savings [5]. Paper will co-exist with electronic records for the foreseeable future; however, what happens when the official record of an institution becomes "paperless"? This short paper presents a case study describing the efforts in the University of Oregon Office of the President to move to a fully electronic records system, the trickle-down effect to campus units, and the work of the Libraries to preserve the institutional record. The Libraries created a model to solve the immediate needs of the Office of the President addressing issues of workflow and preservation before an ideal system and staffing could be realized. A hands-on approach was employed, focusing on day-to-day work and ease of use for office contacts, and standards and migration plans for archival files using PLATTER [1]. By doing this, a foundation was created for an electronic records system that can be adapted across campus for administrative offices, faculty scholarship, cultural museums, science labs, and student coursework.

1. CAMPUS ENVIRONMENT

Records management at the University of Oregon (UO) has been mixed between a paper and electronic records system for many years. The University of Oregon has a long and proud history of decentralized information services and procedures, and does not require many specific systems be used across campus. As a public university, the institution's records must be kept in accordance with Oregon University System rules [2] and state public records laws [3]. Under the Oregon Administrative Rules that govern digitized and electronic records, born digital records can remain in their electronic form for preservation of electronic copies. For digitized records of permanent value, current rules require preservation in paper or microfilm. These rules are currently under review by the state. The University Archives, located within the Libraries, administers the permanent records of the University.

Beginning in 2006, many of the campus administrative offices such as Admissions, Registrar, and Financial Aid began using an enterprise document imaging system, Singularity, which interfaced with the campus-wide data management system, Banner. Yet, while all of this was occurring there were also homegrown and stand alone document imaging projects and data management systems being created throughout the university. From the perspective of electronic records management, while the document imaging system incorporated records scheduling into its infrastructure, most of the other systems existed with no plan or system for destruction or preservation. In most cases there was a reluctance to tackle this issue within departments because of the enormous scale and the dearth of available resources. Prior to the 2009 effort, except for occasional final reports received in digital form and made available through the university's institutional repository[1], there was no plan or workflow for comprehensively collecting and preserving the electronic records produced by an office. In only one prior instance was this done: a small office in International Affairs closed and its records concerning the events surrounding the granting of an honorary degree were transferred to University Archives on floppy disks. Lacking a workflow or storage space the files were converted to PDF and put in the institutional repository. The native files were put in a dark archives. Subsequently there have been challenges with providing context and identifying the files as archival, rather than current in this online environment.

At the University of Oregon, the President is the chief executive officer of the university. During this period, there was widespread use of Microsoft Office products within the Office of the President, including Outlook for e-mail and calendaring, but for preservation purposes all important records were printed in triplicate and filed in chronological, topical and high profile issue files. There was no integration of a digitization project for paper or preservation efforts for the born-digital electronic records within the office until after the close of the presidency.

2. CHANGE

With the arrival of the new university president on July 1, 2009, there was a new focus on electronic records

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[1] Scholars' Bank, http://scholarsbank.uoregon.edu

produced by the Office of the President. Only one of the previous executive assistants remained with the new administration. New Office members and administrators possessed a greater facility with the use of technology in records creation. Efficiency and use of technology to improve efficiency was emphasized. As a result, not only were important documents not printed in triplicate, but the Office, under the direction of the President, committed itself to going paperless, scanning any documents received in paper format and refraining from printing except when required.

In the previous environment, records were delivered to the University Archives annually. The transfer was routine and institutionalized. With the change to electronic records, there was opportunity both to lose access to records that formerly would have been delivered in print, but also to gain access to records such as email that may have been left out of the transfer to the Archives, as well as receive files with the original file metadata appended.

Prior to his arrival at UO, Richard Lariviere was the Provost at the University of Kansas (Lawrence). While Provost he oversaw the start of a campus wide, comprehensive information management program, which brought together digital information security, electronic records management and archives, as well as digital asset management and preservation.[2]

Conversation on campus has quickly disseminated the Office of the President's new emphasis on reducing the reliance on paper and improving efficiency in university administration. Other offices on campus have actively contacted the University Archivist to seek direction on how to better manage and access their records electronically and ultimately to schedule and transfer electronic records for preservation. University Development is creating a library of documents for access throughout their offices, encouraging people not to print additional copies. The College of Education is implementing a system to manage the creation and management of grants and other financial records in electronic form. The College of Arts and Sciences is hiring a records assistant to help them manage their records in all formats.

3. OFFICE PROCEDURES

To fully launch an electronic records system in the Office of the President, the Office personnel have begun investigating records management systems to meet their needs and legal requirements. In the meantime, records are still being created, and the Office is not waiting for the perfect system before transitioning. To help ease this transition into an electronic records system, ensure that standards are met, and that files may be easily transferred to the chosen system with preservation in mind, the University Archivist and Digital Collections Coordinator met with Office staff in fall 2009. This provided an opportunity to jointly conceptualize a campus workflow for the transition of electronic records to University Archives and to identify unforeseen problems.

The goal of the initial meeting was to advise on procedures for turning working documents into records. Three main topics were explored:

1. Migration of working files to records (including reformatting)
2. File naming conventions
3. Tags and categories to easily retrieve relevant documents

3.1. File Migration

The staff of the Office of the President, unsure of how to proceed, had hybridized practices from the last administration and the goal of going paperless. They were printing out electronic documents, rescanning them into PDF files and then storing them on the networked file shares. By using tools already at their disposal and creating brief instructions, the Archivist and the Digital Coordinator were able to demonstrate how to create full text searchable PDF files from Word and other documents using Adobe Acrobat Pro. Because the Office is not completely paperless, staff were instructed in Adobe Acrobat Pro's native Optical Character Recognition (OCR) engine so that scanned documents could also be made full text searchable

Primarily records created by the Office are Microsoft Office documents, but there are also digital audio / visual files, digital photographs, and web based records. In order to maintain functionality in Microsoft Office documents, such as the searching and tags in Microsoft Outlook, staff were taught to transfer native file formats to PDF. If there was concern that particularly sensitive information might be changed or modified, a PDF was requested for submission to the Archives as well as the native file format. This allowed the staff to feel more comfortable with the transfer of editable file types.

3.2. File Naming

The staff in the Office had a good initial sense about how to uniquely identify files so that they could be easily retrieved. Their work environment demands that they be able to quickly retrieve items as needed; therefore the general principles of uniqueness and easily recognizable file names were already in place. The file names, however, had many special characters and spaces. The staff easily understood that these might cause problems. Staff were introduced to a simple Freeware tool, ReNamer,[3] with the ability to mass apply file naming changes and strip out unwanted characters. A limit of 15 characters to file names was suggested whenever possible.
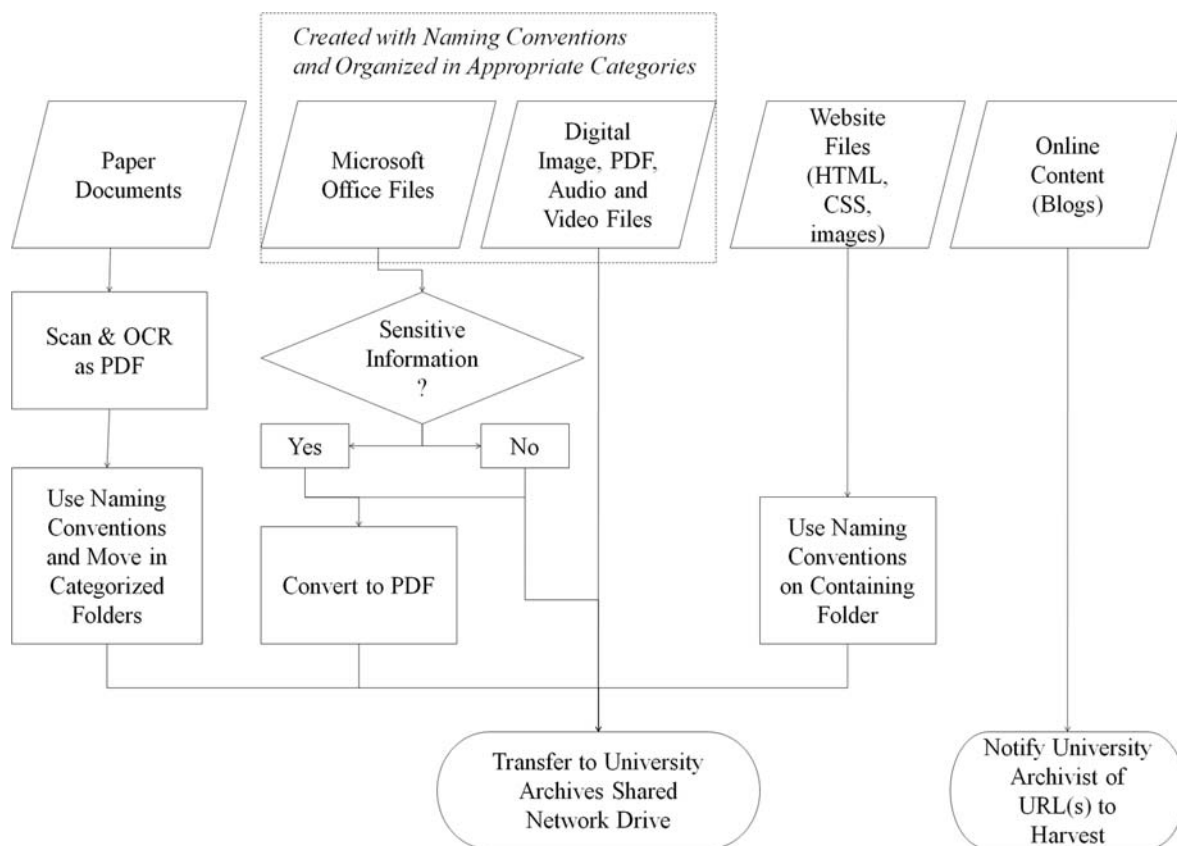
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[2] http://www.provost.ku.edu/infomanagement/index.shtml

[3] http://www.den4b.com/downloads.php?project=ReNamer

Figure 1. Office of the President transfer procedures to University Archives.

3.3. Categorization of Files

The most exciting part of electronic records for the Office staff was the ability to tag and categorize files without having to make triplicate print copies. This was especially valuable in the area of email, where utilizing the tags and flags in Microsoft Outlook could help easily retrieve relevant emails. The staff have begun to make lists of their desired categories in consultation with the University Archivist and Digital Collections Coordinator. The goal is to create a standard list of category names. Examples of these categories include:

- Correspondence
- Reports
- Speeches
- Athletics
- College of Arts and Sciences, etc.

4. PLANNING FOR PRESERVATION

Ideally, any future repository system will be based on the Open Archival Information Standard (OAIS) [4] or at the very least the campus will use a single records management system. In the case of the Office of the President, they had yet to identify a records management system to use. In order to facilitate a workflow that could quickly be constructed for secure ingest, the principles of the OAIS model were followed as closely as possible, with manual controls in a simple file system infrastructure linked to descriptive records in Archivists' Toolkit.[4] The infrastructure was constructed to easily allow migration to an OAIS compliant repository in the future.

PLATTER documentation was used for strategic planning [1] to help express goals and plan object ingestion, migration schedules, institutional support, technical infrastructure, and access conditions. With theory and planning in place, various elements were implemented on the path towards a preservation system. These administrative steps were essential in defining the roles of the local office and those of the Libraries, as well as the infrastructure needed.
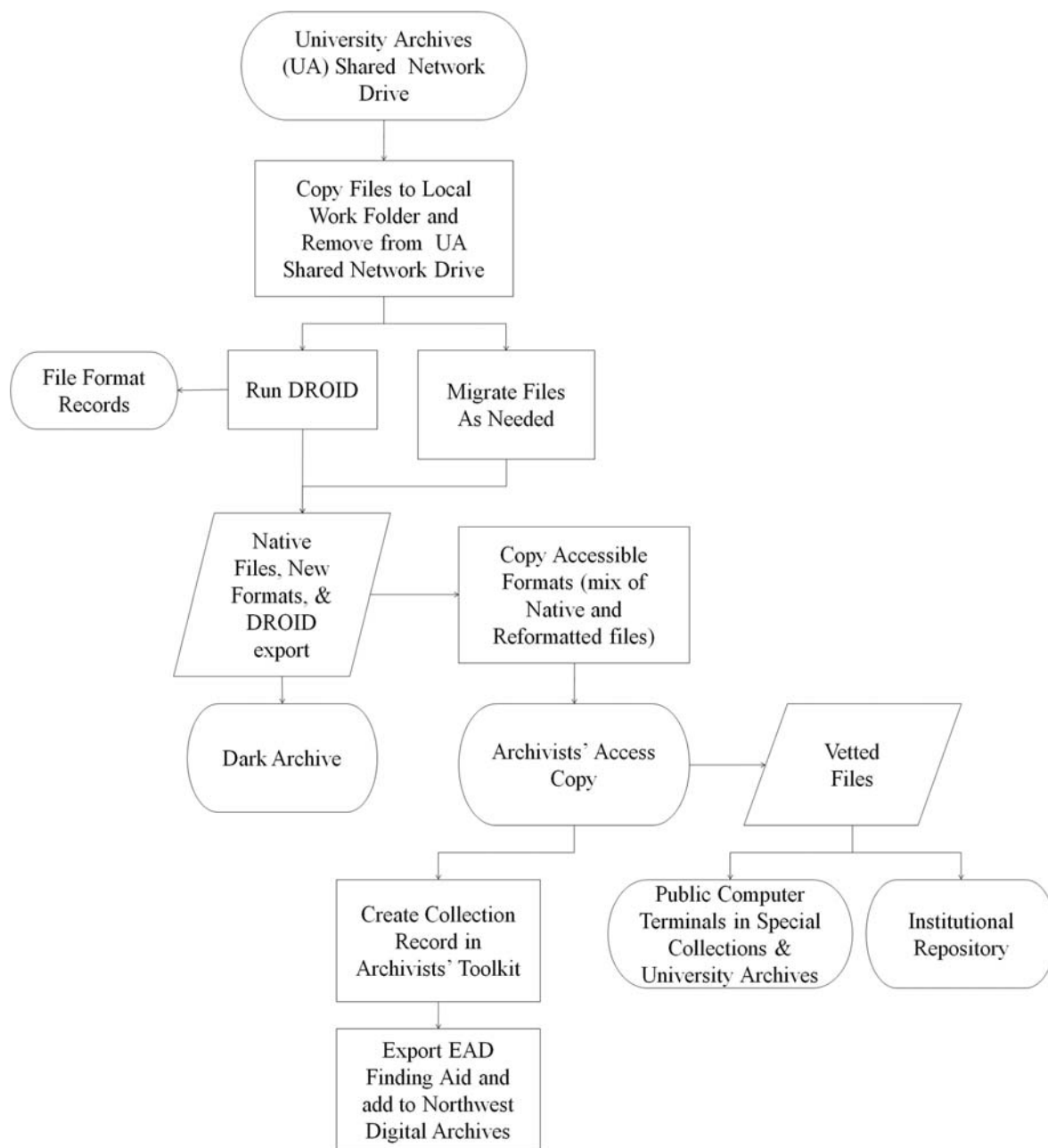
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[4] http://www.archiviststoolkit.org/

Figure 2. University Archives processes for preservation and access of electronic records.

By using familiar tools available to the staff of the Office of the President at the point of document creation, advising on protocols for file naming and description, creating easy ingest mechanisms through mapped network shared drives, an easy-to-implement workflow

Once in University Archives, digital preservation strategies put in place by the Libraries were integrated and access provided through tools currently used by Libraries and Archives staff. The files are inventoried

from a campus office to University Archives was defined. This temporary storage is divided into folders for each campus department and access is restricted to staff in those departments, the University Archivist, and Library IT.

using DROID (Digital Record Object Identification)[5] and file formats are converted if needed. (For example: video files are converted to .mp4.) A text file is exported from DROID and saved alongside the native and converted

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[5] http://sourceforge.net/projects/droid/ from the National Archives of the United Kingdom, PRONOM.

files and transferred to a dark archive with bit level integrity checking and backed-up onto magnetic tape. The lists generated by DROID are also kept in a central location, which acts as a store for all file format lists and is monitored for assessing any necessary future file migrations. A second copy of the file is available as the Archivists' access copy, which can be modified and re-categorized, with the collection record in Archivists' Toolkit pointing to this location. An EAD (Encoded Archival Description) finding aid is exported from the Archivists' Toolkit and added to the Northwest Digital Archives.[6] Publicly accessible records vetted by the University Archivist and the UO Public Records Officer will be made available on computer workstations in Special Collections and University Archives and/or uploaded to the university's institutional repository.

The solution is far from perfect and could not pass a trusted repository audit; however, it is a first step in the implementation of an electronic records program and the beginnings of a comprehensive plan to preserve the full history of the current institution electronically.

5. THE CULTURE OF CHANGE

The growth in acceptance of managing electronic records and the validity of the electronic record as a "record," has quickly spread across the UO campus. Since the arrival of the new president, new efforts are materializing to use technology and new electronic systems and to preserve the output for the future. The motivation is not on using the technology alone but on what advantage the technologies provide. This emphasis will be key to the implementation of a fully paperless records system, and it is the responsibility of the University Archives and the Libraries to ensure that it can be preserved.

5.1. University Senate

In order to involve members of the campus more widely in campus governance, at the initiation of the current University Senate president and executive committee, the final three Senate meetings of the academic year will be captured in digital video and streamed for wider viewing. As the minutes and other documents capturing the activities and decisions of the senate are considered permanent records, the recorded senate meetings will be retained and preserved by the University Archives.

5.2. Teaching and Students

There is increasing use of Web 2.0 tools for collaborative student learning on campus; most of it is ad hoc, driven by faculty and pedagogy, or in some rare cases, student influence. One result is the creation of blogs for e-portfolios, particularly in business classes and architecture, and the potential for campus wide multi-

user blogs for students and faculty. These campus departments are seeking advice from the Libraries on how to preserve these records.

5.3. Faculty Scholarship

The University of Oregon created an institutional repository (Scholars' Bank) for faculty scholarship in 2003. Like many institutional repositories it has had continued but limited use by faculty. This year the Department of Romance Languages mandated that their faculty deposit electronic versions of their scholarship in Scholars' Bank.

The campus science faculty have also begun to think seriously about the preservation of data they create. Although most do not wish to contribute their data directly to the University Archives, they are seeking guidance on preservation issues, formats, and especially metadata and description from the Libraries.

5.4. Museums

The Jordan Schnitzer Museum of Art and the Museum of Natural and Cultural History at the University of Oregon have begun looking beyond online exhibits and using digital images only for their own internal searching. Previously, the museums retained all their data and digital images on hard drives next to a work station in the building. The Museum of Natural and Cultural History has been in conversations with the Libraries on proper image formats, file naming, and back-up and storage for their data. They recently hired a "Conservator and Digital Archivist" to help in this process.

6. CONCLUSION

With the motivation provided by the new university president, the Libraries is able to assist in an easy to use system and on the way to making a paperless records system successful. The University Archives and Libraries are quickly adapting methodologies, standards, and procedures to ensure the preservation of these materials. We cannot wait for the perfect system or uniform systems to be used across campus. By adapting the conceptual standards of digital preservation and an easy-to-adopt workflow, we will be able to guide the campus through the change to electronic records.

7. REFERENCES

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[2] Oregon Administrative Rule, Secretary of State, Archives Division, Oregon University System

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[6] Northwest Digital Archives (NWDA): http://nwda.wsulibs.wsu.edu/

Records, http://arcweb.sos.state.or.us/rules/OARS_100/OAR_166/166_475.html

[3] Oregon Revised Statutes, Chapter 192, Records, Public Reports and Meetings (Public Records Law), http://www.leg.state.or.us/ors/192.html

[4] Reference Model for an Open Archival Information System (OAIS) CCSDS 650.0-B-1 Blue Book (January 2002), http://public.ccsds.org/publications/archive/650x0b1.pdf

[5] Sellen, A. J. and R. Harper. *The Myth of the Paperless Office.* MIT Press, Cambridge, Mass., 2002.