CASE 3

Generating and Archiving Records in Digital Form of the Promotion and Tenure Process at the University of Michigan

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ISSUE: The university archives staff advised on issues of record integrity and preservation in establishing a new process for creating and transferring digital faculty promotion casebooks. Faculty casebooks are one of the university's most important records. Casebooks are confidential records and are closed for thirty years from the date of creation.

KEYWORDS: Administrative information systems, Custodial issues, Data integrity issues, Implementation planning

Institutional Context

The University of Michigan was established in Detroit in 1817, and relocated to Ann Arbor in 1837. In addition to the main Ann Arbor campus, the University of Michigan has two satellite campuses. The University of Michigan-Flint opened in 1956, and the University of Michigan-Dearborn followed in 1958. In 2007, the total university enrollment for all three campuses approximates 55,000 undergraduate and graduate students. The University is comprised of 19 schools and colleges. In the last academic year, over 13,000 degrees were awarded. The university research expenditures total over $700,000 million.[1]

The University Library has nineteen libraries within its system and several independent libraries including the Bentley Historical Library. Established in 1935 by the University of Michigan Regents, the Bentley Historical Library has two functions: to serve as the official archives of the University and to document the history of the state of Michigan and the activities of its people, organizations and voluntary associations. The Bentley is comprised of three divisions: the Michigan Historical Collections, the University Archives and Records Program, and Access and Reference Services. The Bentley Library reports to the Provost and Executive Vice President for Academic Affairs. Bentley staff members involved at some level in this case study include Francis Blouin, William Wallach, Nancy Bartlett, Brian Williams and Nancy Deromedi.

Background

At the beginning of 2005, staff of the University Archives and Records Program of the Bentley Historical Library received a call from the Provost's office. The office advised us that two of the largest academic units at the university were initiating a one-year pilot project to test the review of faculty casebooks for promotion and tenure entirely in digital form. The two units, College of Engineering and the Medical School, wanted a process that was completely digital. Until 2005, the process entailed the compilation of casebooks in paper form. The casebooks typically include the recommendation for promotion, letters of recommendation, curriculum vitae, teaching evaluations, and other background material. The growth in the size of the casebooks had become an issue. The books had to be assembled through a process of tedious copying and compiling. Numerous sets of the casebooks in binders were required for the reviewers. At the end of the process, one set was sent to the Bentley for the archives after an internal check by designated office staff that ensured that the archive version was complete and accurate. The university has regarded the sets of paper casebooks transferred over the years to the Bentley Library as the official record of the promotion transaction.[2]

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[1] Did you Know?…, University of Michigan Communicator's Forum, [http://mmd.umich.edu/forum/know.html](Last viewed 11/27/07).

[2] Bentley Historical Library. Finding Aid. University of Michigan. Office of Human Resources and Affirmative Action. Section: History.

Faculty Review and Promotion: "the most important thing we do throughout the year."[3]

The voluminous nature of the faculty casebook has not always been an issue. In fact, at the December 1921 Board of Regents meeting, the university president commented that he "felt that our method of making promotions in the past has been a little too casual." At this meeting, the president proposed that "in the future no one shall be promoted to the rank of assistant professor, associate professor, or full professor without an actual communication of the Board of Regents pointing out why such promotion is recommended[4]."

The university now considers as many as 300 faculty each year for promotions of one kind or another. In most of these cases, particularly those that involve promotion to tenured ranks, the casebook can be several inches thick. It is a record that is regarded as "the most important thing we do through-out the year."[5] Recommendations for faculty promotions and the granting of tenure initiate in the individual faculty member's department, division, college or school. Once the school or college has completed its own internal promotion reviews, the dean of the school/college makes the recommendation to the provost. Both positive and negative recommendations must go forward. Casebooks are compiled and organized by the school/college in accordance with a set protocol issued by the office of the provost. Once the book is compiled, it is first sent to the Office of Human Resources and Affirmative Action (HRAA). The HRAA checks the completeness of the casebooks and notifies the school/college if there is any missing information. The provost reviews the recommendations by circulating the casebooks to a set inner circle of reviewers. Then, based on this review, the provost's recommendations are sent to the Board of Regents for final action. In relatively rare circumstances, the provost may overturn a recommendation from a school or college.

These faculty case files include the promotion recommendation from the dean, a curriculum vitae, and letters of recommendation. There are other categories of information that can vary by discipline. At this point, the casebooks do not include documents that have embedded links to external files or resources. For many years in the paper environment, the Bentley Library has held the records of the Office of Human Resources and Affirmative Action and has maintained a separate record group for Faculty Promotion and Tenure Casebooks. Casebooks in the record group date from 1961 and total 90 linear feet.[6] The casebooks (in binders) are organized by academic year and thereunder by name of academic unit. A file listing is enclosed for each box. Processing of the material is straightforward. There is no appraisal or reorganization involved. These are official records with mandatory retention periods. Successful cases are kept indefinitely. Unsuccessful cases are kept for seven years. The main tasks in the paper environment simply involve housing the binders and updating the catalog record and

[3] President Lee Bollinger, Regents Meeting, May 2000, Regents Proceedings, p. 292
[4] Board of Regents Meeting, December 1921, Regents Proceedings, p. 340.
[5] Ibid.
[6] This figure is effective as of February 2006.

finding aid. Casebooks are closed for thirty years from the date of creation. Access to the casebooks before the expiration of the thirty-year period is limited to authorized personnel from the Office of Human Resources.[7] Migrating this process from a paper-based to a digital- based environment involved several steps and considerations.

Defining a Process and Procedure for Digital Review

The provost's office took charge of calling the first meeting to discuss the "electronic promotion and tenure process." Invited to the meeting were representatives from the associate dean's office in the College of Engineering, information technologists from the College of Engineering network department, provost's office staff, and archivists from the University Archives and Records Program of the Bentley Library. The primary agenda item involved defining and formalizing a procedure for the creation, review and transfer of casebooks in digital form for the two pilot schools (engineering and medicine).

Because the files contain confidential letters of evaluation, it was essential we build in adequate security procedures for moving the process to a digital environment. This meant security in storing the material as well as security in moving the files from the location of origin, through the review process, and ultimately on to the archives. This involved verifying the contents of the file, managing permissions, and verifying that the final unaltered record was the archived version. Every step of the process had to be reviewed. Each unit involved in the process had to anticipate the needs of other units in ways that were different in the digital environment than in the paper environment. Most important, the physical compilation of the paper was no longer considered to be evidence of the record. There needed to be a set of signoffs through the process confirming that the creation and use of the record was accomplished in a controlled environment. Thus the process itself would stand as the testimony of the record's authenticity.

A second dimension of the discussion focused on the requirements for the circulation of the information. This involved establishing a process that was workable for the units, met the archives requirements, and ensured the security of the files through the entire process. Working with available technology on campus, the Provost's office chose the university-supported system called "Ctools." Ctools is a "course and collaboration tool" designed mainly to support teaching activities. Hundreds of instructors at the university now use the system to provide students with an online portal that pointed toward class information.

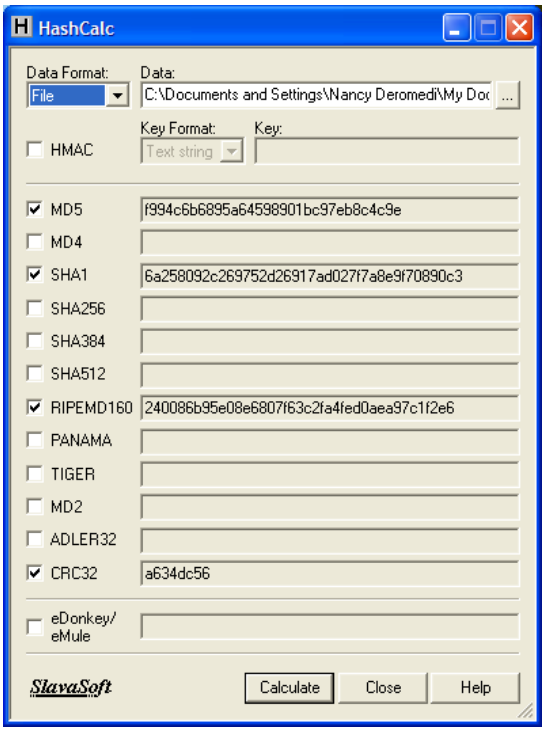
The Ctools system seemed to be the best choice since no budget existed for purchasing or developing a new system. Ctools provides an interface for each class or project. So, in this case, the Provost set up a "project" for each of the schools involved—College of Engineering and Medical School. Within each project, a directory structure was set up that in some ways mimicked the paper file system. For example, file directories within a College of Engineering portal were set up for Research and Teaching-track promotions.

[7] Email communication from Brian Williams, associate archivist to Sharron Schmidt, Office of Human Resources, June 21, 2006.

Permissions were set at the directory level. The Provost's office became the unit responsible for rights management through the entire process.

Records Integrity through the Process

In this discussion, the integrity of the records was one of the main concerns. This proved critical because the record was created in one office and then virtually handed off to the Provost's office which in turn would then virtually hand it off to a set of reviewers. How could we ensure that the record that became the archival version was not changed in any way from the beginning of the process to the time that it was transferred to the custody of the archives? This was a concern that the archives staff raised. We learned that the university does not support digital signatures at this time. One of the information technologists from the College of Engineering suggested that the group investigate an option of running a checksum on each of the files.



The College of Engineering technologists recommended using Hashcalc. After some discussion and post-meeting trial of software applications, the written procedure specifies that the person assigned to assemble the casebooks within the dean's office would run a checksum on each file. The checksum file would be fixed as a record and placed in the work space (Ctools). The checksum file would be viewable by the reviewers. The file would, however, be transferred along with the casebook files at the time of the accessioning to the Bentley repository. Part of processing the collection, then, is to verify each of the casebook file checksums by running the checksum application and by comparing the two figures to confirm that they match.

Implementation

For the two schools that adopted the digital process, their respective dean's offices compiled one digital casebook for each individual who was under consideration for promotion. Staff used born-digital files and files that had been digitized. Once the casebook was compiled, the dean's office staff uploaded the digital casebook into the designated directory within the Ctools system. Permissions are assigned by the person's

unique university name. The file was first reviewed by the Office of Academic Personnel. Once this office determined that all required elements were present, it "certified" the authenticity of the file in hard copy signoff sheet that would eventually be transferred to the Bentley Library and become part of the record of this file transfer. The files were then available to the provost to assign reviewers. Using the Ctools capabilities, only the designated reviewers could open specific files.[8] Paper-based promotion casebooks from the other schools and colleges that are not involved in digital submission continue to be archived as before.

Transfer to Bentley Digital repository

September 2005 marked the first transfer of the digital casebooks to the university archives. In total, eighty-four casebooks in digital form were transferred, uploaded, checked, validated and accessioned. The entire process to "archive" took much longer than what we originally anticipated. The "multiple file upload" option that is supposed to be available through a program called WebDav was, for some unknown reason, inoperable on the computers at the Bentley Library. Instead, each of the files was uploaded one at a time and the process to move the files from the active system proved extremely slow.[9] The second item that did not go quite as originally envisioned involved verifying the checksums for each of the files. Various attempts to trouble shoot the problem failed to correct the problem situation. A selection of the checksums did not match the calculations that had been extracted at the time of the transfer. This was an issue that none of the offices had thought about and were unsure what to do other than rerun the checksums. Oddly, by re-running the unmatched checksums, the sums finally could be verified and signed off on.

Archives as Custodian

The partners in this project looked to the university archives both for new advice and to fulfill traditional roles. Custody of the archival record was not an issue that was debated during the planning of the procedure. Rather, we all assumed that this role will remain a key function of the archives in the digital era. Because the promotion records are highly confidential, we saw that the server space allotted on the Michigan tree for the Schedule of Classes would not be suitable for the casebook record. It was our desire to obtain a storage medium that is a "dark" archive. We did not see an external storage medium such as CD-ROM or DVD as suitable, as we did not want to have the added complication of migrating the material from a physical medium. We investigated the type and cost of spinning disk space at the university. We found that the university does provide "chunks" of managed server space on secure, off-site servers for academic and administrative

[8] The unique name is the unique identifier given to current faculty, staff and students. Computing resources are organized by uniquename and permission-based resources require the use of a valid uniquename for use.

[9] This problem was brought to the attention of the Provost's office and the developers of the Ctools system. A developer worked with staff here trying to pinpoint the problem to no avail. It was decided to see how the process goes next year and then a decision may be to switch to Macintosh for the next cycle. The Macintosh operating system integrates better with the WebDav application.

units.[10] We obtained the space in July 2005. Access to the space is limited to two staff members on the university archives staff. Permissions can be set at the file level by the administrator of the server space. The space is not viewable by anyone at the university other than the systems administrator. The space is backed up nightly and serves as a secure digital repository.

Analysis

At the end of the process, the university archives sent the Provost's office an email message noting that the files were received, verified and accessioned. The memo to the Provost's office included an outline of the problems with the Ctools system and with the unmatched checksums. As it turned, out the problems with the slowness of the system were not limited to the university archives. The Provost's office called a meeting with all those involved in the process to evaluate "how things went." By the time that this meeting was held, the Provost had thirteen more schools and colleges that were ready to join in the digital review and submission of casebooks for 2006. It was decided that for now the procedure would remain essentially the same except that the university archives would receive the "fixed" promotion casebook at the time the files were transferred to the review system rather than at the end of the review process. The open question at this point is to decide how to manage negative casebooks. In the past, the university archives has not been requested to preserve the files for those faculty who had not been granted a promotion or tenure.

The invitation at the beginning of the change to a digital review process was very welcome by the university archives staff. The university archives was viewed as a vital player at the table during all of the initial discussions and follow-up conversations. The technology for the transfer of the documents is not as robust as one would want. The importance of this case can be viewed by our involvement in the definition and formalization of a process for a highly confidential and vital evidential set of university records.

[10] The particular service is called MyShared Server. The cost of ten GB of space is approximately $4,000 a year. Responsibility for the maintenance of the server is centralized to the information technology department and is a viable option for units that do not have a systems administrator on staff.