

The title of today's presentation "Institutional Repositories: Essential Infrastructure in the Digital Age" piqued my curiosity. My trusty, old, dictionary, a Canadian edition of Webster's, did not contain the word "infrastructure." A search of Dictionary.com provided several definitions:

1. the basic, underlying framework or features of a system or organization
2. the fundamental facilities and systems service a country, city, or area, as transportation and communication systems, power, plants, and schools
3. the military installations of a country

but gave no hint about the origin of the word or when the word entered into common usage in the United States. A Google search revealed the article "The Etymology of Infrastructure and the Infrastructure of the Internet"¹ and an explanation that the word entered the English language - from the French - in 1927, initially in the context of railroad engineering. Over the years it has acquired a variety of meanings, some negative, others positive.

Having satisfied my curiosity about the etymology of the word, I sought to find a connection between infrastructure and repositories. Infrastructure implies strength and robustness, as well as stability and permanence. The idea of using 'infrastructure' in connection with the institutional repository is imaginative and classifies the repository as a powerful enterprise designed to manage information in a structured, orderly fashion.

In searching for images to accompany the presentation, I discovered what I thought might be the perfect metaphor for 'infrastructure.' An installation at the Desert Botanical Garden in Phoenix by Dale Chihuly, an internationally renowned, Takoma-based, glass artist, juxtaposed glass sculptures amidst the cactus and other desert vegetation in spectacular fashion. The glass pieces are absolutely breathtaking and they illustrate the harmony between strength and form and seem to capture the essence of infrastructure in a powerful and unique way.

¹ (posted by Stephen Lewis, Sept. 22, 2008 – <http://hakpaksak.wordpress.com/2008/09/22/the-etymology-of-infrastructure-and-the-infrastructure-of-the-internet/>)

Since our situation at the University of Maryland School of Law is similar to that described by Carol and James, I thought rather than going into great detail about the basics of how and why we established the repository, I would focus more how we have leveraged our financial and intellectual investment in the institutional repository by buttressing and strengthening its basic infrastructure and making it a vital component of our institutional environment.

The institutional repository at Maryland began, in true construction project fashion, with a period of study and information gathering in the library that lasted about a year. During that time we concentrated on familiarizing ourselves with the repository movement which was still very much in its infancy. A Research Papers series in the Legal Scholarship Network, a sub-network of the Social Science Research Network (SSRN), established and managed solely by the library, provided us with an excellent dose of practical experience in managing the technical aspects of soliciting and posting content. After studying the current landscape, we felt confident that we were sufficiently well-informed about the subject and could begin to lay the foundation blocks for the institutional repository.

Whereas the first, investigatory, stage took place primarily within the library, the second stage was more outward looking, consisting of promoting the concept of the repository, explaining its purpose and value, and lobbying for funding. This required us to reach out to our constituents, the faculty and administrators of the law school and solicit comments from stake-holders. After demonstrating the features of the repository and explaining how it would benefit the institution by serving as a marketing tool and a showcase for the law school's research and scholarly output as well as be advantageous to individual faculty members by providing them with a secure, permanent platform for their scholarship, we received a commitment for financial support from the law school that made it possible for us to enter into contract negotiations for the repository.

Resolving the contractual issues – establishing the legal framework - is at least as important in creating a viable structure as preliminary planning and took another year. Although considerable time was devoted to dealing with the legal issues, that time was also used to flesh out a conceptual framework for the repository which served as the blueprint for the initial implementation phase and continues to guide the repository's ongoing development. Once we had a fully executed contract we began an aggressive campaign to populate the repository with current faculty scholarship. The DigitalCommons@UMLaw was launched on March 9, 2006.

Initial content was added systematically, using papers previously deposited in SSRN. This was followed by adding currently published material. As time and staffing permit, retrospective material is being added.

A few straightforward guidelines were established:

- papers are solicited; faculty are encouraged to make their scholarship available but there is no mandate that papers must be included in the repository
- self-archiving is discouraged; the library is responsible for posting all content
- all copyright clearance requests are handled by the library on behalf of faculty; faculty are encouraged to retain sufficient rights to their work to permit them to be included in the repository

The William Hein Company graciously gave us permission to use the pdfs from Hein Online for articles written by our faculty with the proviso that the documents retain the Hein Online footer. In the course of the first three years, nearly 700 faculty publications have been added to the repository and there have been nearly 60,000 downloads of full-text content in the past twelve months, a number I find quite staggering. Roughly 50 **new** faculty publications are added to the repository annually.

From the beginning, we considered that the repository would serve as the permanent, historical, digital archive for faculty publications. As we gained experience and familiarity with managing the repository we discovered that it also has the potential to serve as the platform for a wide variety of content that draws attention to the breadth and depth of the law school's many and varied scholarly activities.

The law school at Maryland nurtures a vibrant and entrepreneurial climate. As stewards of the law school's scholarship, our task is to reflect and enhance those characteristics through the communities and series within those communities that reside in the repository space. For example, to focus attention on the content of meetings hosted and sponsored by the law school, a community for conference proceedings was set up. This includes both recurring conferences such as the Business Law Conference as well as meetings and programs on special topics. One of my favorites is the annual Maryland Constitutional Law Schmooze, featuring the papers – known as 'tickets' - written by the attendees! (There is no registration fee to attend the Schmooze, but each attendee contributes a paper – aka “ticket of admission.”) The Schmooze is the perfect setting for participants to share ideas and receive feedback and constructive criticism from colleagues on nascent ideas. Many of the papers prepared for the Schmooze represent innovative and provocative scholarship about constitutional law.

One of the law school's strengths is cultivating the relationship between research and instruction. The repository captures that connection in several series. Material included in the Student Articles and Award Winning Papers series has either won a prize or been published (or accepted for publication) and epitomizes outstanding student scholarship.

The Maryland legal history series includes both faculty scholarship as well as essays written by students enrolled in the Legal History Seminar. Student papers in this series are included on the recommendation of their advisor.

A series of short films produced by students in the Environmental Law Clinic films focuses attention on critical issues in environmental law and policy.

Over the years, members of the faculty with special expertise have been called upon to testify before Congress on a variety of issues. Those remarks are now readily accessible through a series devoted to the

congressional testimony given by members of the law school faculty. Thirty-one documents featuring testimony on topics from international affairs to the credit crisis and ranging as far back as 1970 have been added to the repository to date.

To further enhance the repository and make it more useful both as a promotional tool for the law school as well as a way for individual faculty to feature their scholarship, faculty now have the option of establishing a personal, customizable, webpage within the repository structure. Known as ‘Selected Works,’ these web pages complement the static and structured faculty pages maintained by the law school. Selected Works pages are highly flexible and information can be massaged and displayed in a variety of ways according to individual preference. Content is harvested easily and quickly from the repository and displayed both by type of publication and by subject and the subject view is specific to the individual and completely under the faculty member’s control. Links to publishers’ websites for details about titles written or edited by faculty, but for which full text content is not available, are accessible from Selected Works pages, as are links to special projects. Adding Selected Works has enriched the repository and created a more balanced structure that satisfies institutional as well as individual needs and expectations.

While utilizing repository content, Selected Works allows faculty to recast their scholarship in ways that make sense for them and to which their colleagues and peers can relate while continuing to underscore the breadth and depth of scholarship and research taking place within the law school community.

The repository’s basic infrastructure has been in place for three years. As we approached the repository’s fourth anniversary, we realized that the repository’s potential is much greater than originally anticipated² and could be used to do far more than simply expand access to scholarly information. Building on that notion, we now envision using the repository not only to expose the depth and breadth of the institution’s intellectual output but also to augment the law school’s outreach, marketing, and public relations efforts.

² *Against The Grain*, Feb. 2009. p. 90-91.

Based on the conviction that the repository has enormous potential as a marketing tool, adding content that supports the law school's administrative activities is a logical next step. Especially in these difficult economic times, raising awareness about the law school's ambitious agenda among legal practitioners, alumni, legislators, and the community at large is more important than ever. With the basic structure in place, and maintaining steady, solid growth in the repository's core content areas, we recently added a new dimension to the repository when we created an online presence for the law school's alumni magazine, *JD*.

By aligning the journal with the repository, the law school's Office of Institutional Advancement will:

- create a permanent, searchable archive of the journal's content
- expand its contacts with the community and at the same time achieve a permanent, searchable, digital, historical record of law school programs and events
- demonstrate that the repository can successfully incorporate both academic and administrative content

Preparations to bring *JD* online took some time but now that the first issue available, it is obvious that the effort was worthwhile. Since *JD* is an annual publication it will be a while before the 2009 issue is ready. In the meantime we have begun converting the back issues of *JD* and hope eventually to have the complete backfile online. Although digitizing *JD* does not constitute publishing in the strictest sense of the word, the experience gained in manipulating existing content increased our interest and desire to use the repository as a publishing platform, and with some ingenuity, a dose of hard work, and a bit of luck we may do just that.

Those of us who work with the repository on a regular basis are very aware of the wealth of content it contains and equally aware that much more could be done to make that content even more accessible. While repository content is discoverable through a Google search, we thought it would be appropriate to provide access to the content through our online catalog. The obvious solution would be to enable repository data to be included in a federated search. In our environment, federated searching has been only marginally successful, primarily because the most popular databases and those that are used most frequently do not lend themselves well to metasearching. Therefore, our solution has been to include the repository - DigitalCommons@UMLaw - as an option among the general legal databases we offer. This may not be the most efficient solution but for the moment we believe that making repository content

available in this way has the potential to raise the repository's profile and lead users to a wealth of information that was previously less easily accessible.

While it may be a somewhat novel, even unusual approach to make repository content accessible this way, it represents only a small structural change. We are also very interested in identifying a method to capture metadata for individual items within specific series, such as the faculty publications and congressional testimony, and make it available through the online catalog. One option is to output an Excel file with the metadata and, working with our library systems office, craft a plan that will create a quasi-bibliographic record for each item that can be searched using conventional search strategies. This method would require us to resolve some technical and political issues, but they are not insurmountable. Another alternative might be to use the OCLC Connexion Metadata Extraction tool. This method, while more labor intensive initially, requires no technical support from the library systems office and would allow us to manipulate the records locally. Whichever method we choose, the result will be a major enhancement in terms of accessibility of repository content as well as adding significant value to the often embattled online catalog.

Although the majority of faculty research and scholarship continues to be print and paper based, it is no longer unusual to receive requests from faculty to include various forms of media in the repository. We are able to do this, either by uploading the content or by linking to it, as demonstrated by a snippet from the YouTube video of Professor Citron's presentation at Yale.

Uploading videos and other forms of media has presented us with a host of interesting challenges but has made the repository space much more valuable and exciting.

Strengthening the repository through the addition of archival material is also of great interest to us. We already maintain a number of image-based collections including the *African Americans in the Law* which are presently accessible through the library's home page but we would like to find an additional (or alternative) platform for presenting material that is more image-oriented than textual. A recently acquired collection of political and campaign photographs and other documents related to an NAACP voter

registration drive would be appropriate for the repository.

Incorporating image-based collections into the repository will strengthen the structure and provide opportunities to reveal more of the law school's unique qualities. At the same time, special, historically significant content will be exposed to a much larger audience than might otherwise be possible. In addition to the physical preparations that are needed to ready the documents for scanning many interesting technical challenges must be met such as understanding the relationship between archival MARC and DACs (Describing Archives: a Content Standard) and solving the problem of displaying related images - for example, both the front and back of a sample ballot - simultaneously.

Over the last decade, much has been written about the potential of the institutional repository to expand access to scholarly information and highlight the depth and breadth of an institution's intellectual output. Much has also been written about the failure of institutional repositories to fully realize that potential. Initially, the motivation behind the institutional repository movement was "build it and they [the faculty] will come" based on the assumption that faculty would be excited about including their scholarly works in a repository. In fact, this turned out to be a rather significant miscalculation. Put quite simply, faculty did not appreciate how the institutional repository would benefit them nor were they interested in contributing their papers. As a result, in many instances, "they" did not come. In some circles, doubts are even being expressed both about the validity of that concept and about the future of the institutional repository itself.

Although opinions within the academic community are mixed about the success of the institutional repository as the means of expanding access to scholarly communication, our experience with the repository seems to belie that belief. By making faculty participation voluntary, by taking a low-key approach that fits in with the institutional culture, and by assuming responsibility for all repository activities, our expectations for the repository have not only been met, but have been exceeded. And the best tool we could ask for in terms of recruiting content and for exposing the repository's potential to faculty and administrators – word of mouth.

Establishing and maintaining the institutional repository is a continually challenging endeavor. What began as an electronic archive for the law school's scholarship is now a robust, multi-faceted structure with a flexible framework designed to preserve a broad array of institutional resources in a permanent, digital form. The repository *is* an institutional asset. As such, we must continue to reinforce it so that it remains an essential element in the institutional framework of the School of Law.