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Institutional Repositories: An Opportunity for CIO Campus Impact

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In the wake of Hurricane Katrina, organizations are reexamining their strategies for ensuring the continuity of their core operations. Business continuity has become a focus for higher education institutions nationwide as we watch and assist our Gulf Coast colleagues who are experiencing the very real problems of recovering from a natural disaster. For colleges and universities, these strategies must include maintaining continuity for the scholarly work of faculty and researchers. The importance of the research enterprise calls for paying significant attention to the stewardship and preservation of the institution's digital assets, particularly those that are unique to the campus.

Campus systems that store these unique digital assets can be found in central IT units and in almost every academic and administrative department. Systems that hold these assets include not just those set up specifically to store individual files but also those for campus-wide e-mail, courseware, e-portfolio, and other learning systems. As readers of this column know too well, however, these systems are neither a satisfactory way of providing short-term access to working papers and other academic creations nor a viable strategy for long-term

management. The collections they hold amount to uncurated aggregations of important and trivial information, current and superseded work, hosted on platforms with no checks for data integrity, minimal metadata for provenance, little encoding for version or access control, and no support for format migration – in short, with none of the structures and functions that together may give some assurance of ongoing accessibility and usability for digital files.

It is the obligation of the chief information officer (CIO) to ensure that the institution's technical infrastructure and systems will support what Clifford Lynch calls "a primary responsibility of our universities" – "to exercise stewardship over these riches: both to make them available and to preserve them."¹ However, trying to fulfill that responsibility can fly in the face of academic traditions of decentralization and departmental autonomy. Faculty can be particular about the treatment of the fruit of their intellectual labors, often resist being regimented into common strategies for information management, and are generally interested mostly in their own (often idiosyncratic) approach to using information technology.² Thus, making the college or university truly "response-able" for digital asset management is a challenge that generates both opportunity and risk for the CIO.

As is often the case in situations in which there is no clear road back and no obvious path forward, leaders must be optimistic that the way will reveal itself once they take action. We believe that the institutional repository movement may offer an opportunity for CIOs to begin to address the needs of digital asset management and preservation on their campuses. Institutional repositories (IRs) are infrastructure and services that organize and make accessible the intellectual digital output of a single institution. Typically, IRs are used as tools for sharing and disseminating the scholarly knowledge created by faculty, researchers, or students to audiences outside the institution, for enabling this audience to find work by faculty and students more easily, for making the work more visible to colleagues, funders, and employers, and for helping to demonstrate the significance and relevance of the institution's research activities.³

IRs are also often seen as tools for preservation. Of course, no repository software can do the entire job of digital preservation. However, repository tools can make some specific and visible contributions to an overall digital preservation program, chiefly through the processes by which high-value items are selected, registered, described, and deposited in a central (or at least known) storage system. To this extent, IRs can encourage campus understanding and discussion of the conditions that make preservation of digital objects possible. For example, the works deposited in IRs are often organized into "communities" that represent research centers, academic departments, and other groupings of faculty and researchers. The processes by which policies are set regarding the types of works appropriate for each community's collection and regarding how replacement of earlier versions by later ones will be administered are often the

faculty's first experience with curation and may serve as an important introduction to the stewardship roles that must be exercised in a full-fledged digital preservation program.

On most campuses, repository programs already involve librarians, archivists, records managers, and institutional administrators. It is important that the CIO see (and seize) the opportunity presented by a new IR program to demonstrate how the security and control provided by central infrastructure (secure hardware, campus networks, data centers, etc.) contribute to the long-term preservation of access to and usability of these important campus assets. Of course, the development of such a service also commits the IT organization to an unknown future. Is the IR just one more system threatening severe consequences if things go wrong? Or is the IR a way to fulfill the IT organization's responsibilities to the institution by helping to solve the significant problem of managing digital assets in a decentralized way? The answer to both questions, not surprisingly, is yes.

At the University of Kansas,⁴ we have found that the involvement of the central IT organization in the IR program provides the following benefits:

- The IR provides a direct means of serving faculty in all disciplines but especially humanities and social science faculty, who may be less likely to see themselves as users of central information systems other than e-mail and courseware. Faculty appear to be aware of security and data loss issues and to appreciate having a secure place to put their work.
- The IR, if fully implemented, provides a window into the research contributions of the campus. As campus leaders seek ways to respond to stakeholders who demand accountability, they are appreciative of ways to document research contributions. Systems that help provide that access serve the campus need for accountability and public relations. Participation in the campus effort to demonstrate the value of research to stakeholders offers the IT organization a venue it might not otherwise have.
- An IR makes visible – to the campus itself and to its leadership – the breadth, depth, and value of the scholarly papers, research data, and other assets held in campus information systems and, by extension, demonstrates the scholarly importance of properly managing those systems and assets. Under the current process of scholarly publication, much of the intellectual output and value of an institution's intellectual property is diffused through thousands of scholarly journals. An IR concentrates the intellectual product created by a university's researchers, making it easier to see its scientific, social, and financial value.
- Involvement in the IR program can help the CIO to stay ahead of a concern that may soon catch the attention of campus leaders. The renewed interest in business continuity could easily expand to include preservation of academic assets. If digital preservation of the campus assets moves to the

top of the campus leaders' agenda, will the CIO be prepared? Working to provide an IR can give valuable experience to technology staff in grappling with the issues of digital preservation and migration. It can also assist the CIO in understanding the full measure of complexity when setting a goal of preserving campus digital assets and can help prepare the CIO for engagement on those issues with campus leaders.

The CIO has an obligation to ensure timely and effective campus response to technology issues. Academic digital assets – maintained, as they usually are, in a decentralized way – should be of deep concern to the CIO. Implementing an IR is a way to begin to explore the role of central IT in aiding digital preservation and in opening up a campus discussion on these topics.

¹ Clifford A. Lynch, "Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age," *ARL Bimonthly Report*, no. 226 (February 2003), <<http://www.arl.org/newsltr/226/ir.html>>.

² Nancy Fried Foster and Susan Gibbons, "Understanding Faculty to Improve Content Recruitment for Institutional Repositories," *D-Lib Magazine*, vol. 11, no. 1 (January 2005), <<http://www.dlib.org/dlib/january05/foster/01foster.html>>.

³ See Raym Crow, "The Case for Institutional Repositories: A SPARC Position Paper," *ARL Bimonthly Report*, no. 223 (August 2002), <<http://www.arl.org/newsltr/223/instrepo.html>>.

⁴ The University of Kansas institutional repository, KU ScholarWorks, may be found at <<https://kuscholarworks.ku.edu>>.