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Increasing Self-Archiving of Faculty Publications in Institutional Repositories

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Abstract

Despite the increasing interest in institutional repositories by academic institutions and recognition that publisher policies make widespread "green" open access currently achievable, faculty deposits in institutional repositories remain low. Surveys show that faculty support open access initiatives, but may be held back by the perception that self-archiving of their publications creates extra work for them. The solution to this is to make self-archiving in institutional repositories as easy as possible for faculty. This can be done in three ways: (1) outreach and education, (2) institutional mandates and (3) increasing the visibility and findability of repositories. The conclusion is that a range of strategies will need to be adopted, and will vary based on the particular characteristics of each institution.

Institutional repositories are widely seen as the fastest route to open access for the widest range of scholarly and research literature, since they allow authors to publish in their choice of journals while providing the broadened access without pay barriers that is the hallmark of open access publishing. It seems to be the best of both worlds – scholars retain their ability to publish in the most prestigious journals in their field while simultaneously breaking down barriers to the wide dissemination of their research. However, voluntary faculty deposits in institutional repositories remains low, despite the advantages to institutions and scholars. This paper explores the reasons for low faculty participation and possible solutions.

Overview of Institutional Repositories

Institutional Repositories (IR), sometimes called "Green" open access, constitute one of the two main ways to achieve open access to scholarly publications. As defined by Lynch in an influential paper, an institutional repository is "a set of services that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members" (2003, para. 5). Lynch's description of an institutional repository places it in a complementary position with respect to traditional publishing outlets. However, some see one of the goals of the IR as a challenge to the current structure of scholarly communication (ex. Crow, 2002). Because studies show that faculty are hesitant to jeopardize the continued publication of their favorite journals (ex. University of California, 2007), I believe it is more useful to focus on IR as a *supplement* to traditional publishing.

Institutional repositories are often described as archives of the scholarly journal articles from the university's community. However, they can contain a wide range of materials. According to a survey of Association of Research Libraries members, IRs commonly contain electronic theses/dissertations, journal articles, conference presentations, technical reports, working papers, data sets, learning objects, and multimedia materials (University of Houston Libraries, 2006). Institutions start repositories for a number of reasons, including to increase visibility of the institution, to preserve the research output of the institution, and to provide broad, free access to the published research emanating from the university (University of Houston Libraries, 2006). IRs realize these goals through their interoperability and use of metadata harvesting protocols to allow indexing by search engines, increasing the discoverability of resources in the repository.

Obstacles and Solutions

Many Open Access and institutional repository advocates have noted the trend of low faculty deposit rates in repositories. Salo (2007) notes that the idea "if you build it, they will come" has not panned out in the case of IR. In fact, the worldwide rate of voluntary deposit in institutional repositories hovers around 15-20% (Harnad & McGovern, 2009; Sale, 2006) despite faculty interest in wider dissemination of their work. In this section, I describe faculty concerns about repositories and look at findings about faculty needs, and discuss the possible solutions of increased education and outreach and institutional mandates. I also discuss other barriers to faculty participation in self-archiving activities related to awareness of the repository and how these might be overcome.

Faculty Reluctance to Deposit

Surveys have shown several reasons for faculty reluctance to deposit their work in repositories (ex. Davis & Connolly, 2007; Lawal, 2002; University of California, 2007). Harnad (2006) provides a comprehensive list of faculty concerns about self-archiving. Some of these concerns result from misconceptions and a lack of understanding of what open access and institutional repositories actually mean, but other concerns point out areas that need to be addressed. Copyright is a major concern: researchers tend to be uninformed about copyright issues and their confusion over what is permissible according to their publisher agreements leads to the tendency to be over-cautious (Sale, 2006). There is a mistaken belief that self-archiving violates copyright agreements, when the vast majority of journal publishers allow some form of self-archiving of published articles (Harnad, 2006). Caution may still be warranted due to the wide range of publisher policies that exist (Salo, 2007), which can lead to confusion, and needs to be addressed by repository managers in order to get faculty buy-in.

Another major concern faculty have about self-archiving is the idea that it will take too much time and/or be too complicated to do. Cornell researchers surveyed by Davis and Connolly (2007) described the "learning curve" associated with the institutional repository as a deterrent. However, Swan (2006) shows that the process is much less time consuming than researchers fear, and most who have deposited articles say it is easy or very easy to do so. On the other hand, Salo (2007) notes that there are other issues involved in the amount of time and difficulty it takes to self-archive publications, including investigating publisher permissions, digitizing paper documents, and ensuring privacy for certain kinds of research data. In addition, sometimes a few extra minutes are a few too many.

A third concern is the quality of material housed in a repository. There is a perception that repository contents are not peer-reviewed and that repositories conflict with the prestige factor of publishing in respected journals for promotion and tenure decisions (Harnad, 2006). This suggests confusion over the purpose of IRs, including the misconception that they are a replacement for traditional journal publishing. As noted above, many journal publishers allow their published authors to self-archive their work. Because of these policies, IR should be seen as complementary to traditional publishing (Harnad, 2006). Researchers are still free to publish in prestigious journals in their field and benefit from the peer-review services provided by the publisher. IRs simply broaden access.

Understand Faculty Needs

Along with understanding faculty reluctance, it is necessary to determine what they need from the repository to provide a resource that is attractive to researchers. Swan's (2006) survey shows that the most important reason for scholars publishing research results is communicating research results to colleagues. This motivation is entirely compatible with open access repositories since it broadens the reach of the work beyond those institutions that can afford a subscription. Outreach efforts can focus on informing faculty about how self-archiving in repositories can help increase the impact of their work.

Another important faculty need is building a scholarly reputation for promotions/tenure. Willinsky (2006) describes the "vanity factor" in faculty publishing behavior: scholars will publish in prestigious journals no matter the cost because it raises their scholarly reputation. The University of California's Office of Scholarly Communication (UC OSC) (2007) found this to be a factor in faculty willingness to change their publishing behavior. Faculty are unlikely to fully embrace open access until the promotion and tenure process supports it. Librarians will need to address the prestige factor and the need to comply with promotion and tenure expectations in promoting repositories to faculty. One way is pointing out that many prestigious journals allow self-archiving already, so faculty do not have to change their habits. Librarians or other repository advocates could work to change promotion and tenure policies to take self-archiving into account. Stevan Harnad suggests a requirement that publications be deposited in the repository in order to be considered in performance reviews (Harnad & McGovern, 2009).

There are a number of ways to think about other faculty needs relevant to the institutional repository. One is to think about the two roles of researchers: author and searcher (Sale, 2006). Searchers want ease of discovery and online availability of content, but are not as concerned with authoritativeness. Authors are concerned with research impact and wide dissemination of their work. IRs therefore need to support discoverability and ease of access to full-text, and allow display of use and download statistics to show the impact of authors' work. Looking at the two roles that researchers fill is a broad way of approaching the idea of design for user needs. Maness, Miaskiewicz, and Sumner (2008) describe a more specific way: using the results of faculty and grad student interviews to create personas. Personas are a technique from Human-Computer Interaction research used to help designers empathize with the needs of specific user groups by personalizing them. Although the personas are fictitious, they are based on the characteristics, needs, and desires of the user groups. Because institutional cultures differ, the findings of this study probably should not be generalized beyond University of Colorado, Boulder; however, the technique can be used to understand the needs of users at other institutions.

Education & Outreach

The results of studies of faculty concerns and faculty needs can be incorporated into outreach and education efforts. These efforts are necessary not just to correct mistaken impressions or educate about the benefits of repositories, but also to create awareness of the repository's existence. Swan (2006) reports that over a third of researchers were not aware of the possibility of self-archiving their work. Similarly, the University of California (UC OSC, 2007) found a lack of awareness about scholarly communication issues among their faculty; 75% reported they had not heard of a proposal to mandate self-archiving in the eScholarship repository despite the faculty governance review and discussion of the policy. Librarians need to look at the ways information is being distributed to faculty and decide how this dissemination can be improved.

Outreach efforts should focus on addressing the concerns and needs of faculty to show the benefits of the institutional repository. The definitions for IRs usually focus on the benefits for the institution rather than the advantages for researchers. Since the researchers are the ones self-archiving their work, their buy-in is essential for success. One important message to be included in outreach efforts is the idea that self-archiving is a supplement to, not a replacement for, traditional publishing mechanisms. The IR is compatible with publishing in prestigious journals, addressing copyright and prestige concerns. Another message addresses the importance of research impact by citing the finding that Open Access articles have a citation advantage (see Hajjem, Harnad, & Gingras, 2005). For those who want more information about the nature of the impact of their work, repositories can provide download and view data showing use through time and by geographic region (Sale, 2006). Sale also notes two other advantages of IR that should be communicated to faculty. Repositories can reduce work by allowing faculty to provide a link on their personal webpages to a list of their work in the repository (Sale, 2006). The researcher no longer has to update his or her webpage with new publications since the link always goes to an up-to-date list. In applications for promotion, citations can be easily extracted for use in a CV and download data can show research impact (Sale, 2006). Because of the common perception that IR will create more work for researchers and take time that they do not have, it is important to show ways that the repository can save time and effort.

There are several methods of outreach and education that are commonly suggested for use by librarians. Bankier, Foster, and Wiley (2009) suggest targeting probable early adopters as a first step. These include younger faculty looking to distinguish themselves and those who are already advocates of open access; although established faculty are more likely to feel free to experiment (UC OSC, 2007). Bankier et al (2009) identify the library's subject specialists as being the ideal group to work more closely with faculty to promote the repository. Jones, Andrew, and MacColl (2006) use "diffusion of innovation" theory as a framework for creating a plan for promotion of the repository. They explain that librarians can develop a targeted methodology to speed up the rate of adoption of the IR through an understanding of faculty social structure and communication networks. Outreach activities can use this theory to identify the proper communication channels at different stages in the process of adoption (Jones, Andrew, & MacColl, 2006). These suggestions can help librarians target their attention to the methods that will be most effective.

How do attempts at outreach and communication pan out in practice? A survey of Association of Research Libraries (ARL) members suggest that current practices are not working as well as expected. The majority of libraries used a variety of outreach strategies: subject specialist advocacy, identifying likely depositors, presentations to faculty, and offering to deposit electronic materials for authors (University of Houston Libraries, 2006). However, almost two-thirds described content recruitment as difficult. The University of Minho in Portugal has had success with their promotional plan including a variety of strategies. However, they also instituted a self-archiving mandate making it difficult to assess the impact of promotional activities (Ferreira, Rodrigues, Baptista, & Saraiva, 2008). Partly due to the lack of success of outreach activities to persuade faculty to deposit their work, several institutions have started to consider the implementation of mandates.

Mandates

Institutional policies mandating self-archiving in institutional repositories have started to get more attention in the United States since Harvard University's faculty approved such a policy (Guterman, 2008). Several advocates of IR say that mandates are necessary for success. Stevan Harnad argues that the *only* way to achieve significant progress toward Green Open Access is through mandates (Harnad & McGovern, 2009). Sale (2006) notes that there is a significant difference in deposit rates between universities with mandates and those without, and concludes, "any institution that does not have a compulsory deposit in its kitbag is wasting its money establishing a repository." The idea that mandates are simply providing the impetus for faculty authors to do something they already agree with is supported by Alma Swan's (2006) survey findings that 81% of researchers would willingly comply if their institution had a policy mandating self-archiving. The response of one representative faculty member illustrates this: "the repository is really, really useful and well worth it…if the mandate wasn't in place I still wouldn't use the repository because I just don't do things." (Swann & Carr, 2008).

There are some indications that this does not hold true for all institutions. A survey of University of California faculty shows a resistance to the idea of an institutional mandate (UC OSC, 2007). Rutgers University librarians Jantz and Wilson (2008) indicate that their faculty would be reluctant to comply with a mandate unless there was an incentive program in place. In addition, recently the University of Maryland faculty voted to reject an institutional policy for open access archiving (Suber, 2009). The Maryland proposal only encouraged Open Access publishing and archiving; it did not mandate anything. However, its defeat shows resistance to institutional open access policies of all kinds. These three cases indicate that mandates alone will not necessarily result in success for the repository. In some cases education about the nature of open access via repositories would help with acceptance. In others, mandates would need to be supplemented with incentives, like at the University of Minho (Ferreira, Rodrigues, Baptista, & Saraiva, 2008).

Not everyone believes mandates are necessary or even desirable. Nancy McGovern has a number of concerns about mandates including the difficulty of enforcement, possible effects of a lack of funding, faculty resistance to institutional authority, and the fact that incentives may be more effective in some cases (Harnad & McGovern, 2009). An early argument for IR, Crow's position paper for SPARC (2002) also showed hesitancy about mandates, arguing that participation would need to be voluntary to succeed. Crow advocated incentives as well as constant outreach about the benefits for faculty. Some argue that the problem is not faculty inertia but the fact the IR are not meeting faculty needs. Powell (2008) brings up the need for repositories to reflect the social networks used by scholars in their research. Bankier and Perciali (2008) agree, advocating tools to help faculty establish their "intellectual profile" and facilitate collaboration. Salo (2007) would like repository systems to adequately reflect the needs of contributors by allowing mirroring of content with subject repositories, providing more flexible usage data, and allowing mediated deposit. There is no doubt that institutional open access mandates provide results in many cases. However, if this success is at the cost of reduced faculty goodwill, is it worth it? Looking into ways to make the repository a more useful resource for faculty as well as provide the collection and archival needs of the institution is the best way to create a resource that fills everyone's needs.

Findability

Besides the various concerns discussed in the previous section, another difficulty that faculty might have is finding the institution's repository. Links to the repository should be in commonly visited parts of the institution's website so that researchers can easily find it. To investigate from which pages IRs are commonly linked, I selected ten universities and colleges in the United States from the repository listing at OpenDOAR (the Directory of Open Access Repositories) and explored their institutional websites. I looked for links on specific pages of the site that seemed likely to be seen most often by faculty: the university home page, the library home page, the library faculty information page (if one existed), and the institution's faculty page (if one existed). I also noted when I found links on other areas of the site. The results are shown below.

	Location of Links to Institutional Repository						
Institution	**Institution homepage**	**Library homepage**	**Library faculty info page**	**Other library subpage**	**Faculty resources page**	**Other page**	**Notes**
Columbia University	0	1	0	1	0	0	Link on library homepage in drop-down menu
Baylor University	0	1	0	0	0	1	Link on library homepage in drop-down menu
Boise State University	0	1	1	0	0	0	
Colorado State University	0	0	0	1	0	0	Repository is one of several rotating "featured" items on library homepage
University of Maryland	0	1	1	0	0	0	
University of Connecticut	0	0	1	0	1	1	Link on faculty page is in drop-down menu
State University of New York	0	0	0	0	0	0	No links easily found
Cornell University	0	0	0	1	0	0	Surprisingly hard to find
Boston College	1	1	1	1	0	0	Link on main page in drop-down menu
University of Washington	0	0	0	1	0	0	

In this small sample, the most common places to include links to the institutional repository were the library homepage or sub-pages of the library site. Since the library is often responsible for maintaining the IR, this finding was not a surprise. However, the repository was not as easy to find as the table might imply: links were often not directly on the page but appeared in drop-down menus. This makes them less easy to find because the user would need to know in which menu the repository was listed, which varied between institutions. It was very rare to find a link on the university's main page; in the only case (Boston College), the link was, again, hidden in a drop-down menu. A surprising finding was the rarity of including a direct link on the institution's Faculty/Staff page. Since these pages collect important resources for faculty and staff it seems a logical place to include the repository. I agree with Swan and Carr's (2008) conclusion that the entire web presence of the university needs to be more cohesive. In order to optimize the visibility and findability of the IR, the repository needs to be linked to other parts of the institution's web presence.

Another factor affecting institutional repositories' presence on the university websites was the use of the repository's name for the link. It may be the case that all of these repositories enjoy high awareness levels on their campuses. However, if that is not the case, it may be difficult for potential users to find the repository based on the name. For example, Baylor University's repository is called BEARdocs, which could easily be confused with other university web resources (BearSpace, BearWeb). Perhaps instead of simply including a link in a drop-down menu, links to IR on the page itself could have a brief explanation of the resource.

The names used for repositories are important in determining how the resource is viewed. Bankier, Foster, and Wiley suggest institutions should "name and publicize the repository as something other than an institutional repository" (2009, p. 111). This is because the term has negative connotations for many faculty members. Harnad (2006) notes that faculty are often concerned that the institution is trying to gain ownership and control over their work. Taking the word “institutional” out of the name might help with this misperception. The term “institutional repository” also makes researchers think of mandates and obligations. The task of self-archiving in the repository is “not unlike filling out tedious forms and backing up your hard drive” (Bankier & Perciali, 2008, p. 22). Powell (2008) points out that the term is not intuitive for many researchers, who might be more interested in “making content available on the web” (Slide 11) than self-archiving in a repository.

Choosing names that position it as a community of scholars rather than an archive can help increase interest. For example, Wiley found that Cornell faculty were much more interested in the school’s repository after the name was changed from DSpace to eCommons (Bankier, Foster, & Wiley, 2009). In my sample of repositories, names suggesting this community aspect include Academic Commons (Columbia), Scholarworks (Boise State), Digital Commons (UConn), and eScholarship (Boston College). These names are certainly appealing; however, they do not necessarily make it clear what the resource is for. Using a catchier but less transparent name for the repository should be done in conjunction with an awareness campaign and outreach to faculty. Researchers will not use the resource if they do not know what it is.

The preceding discussion is not intended to be a thorough study of what does and does not work in terms of repository promotion through website links and choosing a good name. It is simply an exploration of what some institutions are doing and some ideas about raising awareness and good impressions of IRs. An in-depth look at how linking behavior or repository name affects deposit rates is beyond the scope of this paper. There are many other variables involved including how long the repository has been active and the institutional culture. Further research on the effect of raising awareness by constant exposure through web links is needed to determine how it would influence the success of the repository.

Conclusions

It is clear that the solutions to low faculty participation in self-archiving in institutional repositories are complicated. The most common finding with each strategy for increased participation is that no one approach will work on its own. The most promising approaches include promotion of self-archiving in repositories through targeted education and outreach, combined with faculty-supported mandates, and increased findability through a greater web presence. Librarians and other IR supporters must take care that their approaches are appropriate for their institutional culture. Studying local faculty needs and preferences for communication channels will help in creating a more useful outreach strategy. Mandates are most useful when the faculty at the institution are supportive. And finally, increased awareness of the repository can come through an increased web presence on the portions of the institution's web site that are most likely to be seen by faculty. The most important consideration is that the IR meets the needs of the faculty as well as their institution.

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