The advocacy and awareness imperative: 
a repository overview

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Abstract:
Populating institutional repositories poses a significant challenge. This paper provides an assessment of awareness and advocacy techniques that have been used in established institutional repositories in Australia and internationally. In summary, a repository policy is essential. Mandates work better than simply recommending repository use. It helps to make depositing as easy as possible and sort out copyright, by providing staff to work with the academics. Contacting academics individually is more effective than printed publicity material. The repository is more useful to the academic if it relates to their regular workflow.
Introduction

It has become increasingly clear over the past few years that populating institutional repositories poses a significant challenge. This paper offers comment on published policies and experiences of the advocacy programs of repository managers in Australia and overseas. Where possible, a comparative analysis is made of different awareness and incentive programs. This paper aims to give repository managers an assessment of awareness and advocacy techniques that have been used in established institutional repositories in Australia and internationally. This, it is hoped, will provide a practical basis for developing programs appropriate for their own institutional repositories.

Repository policies

The first and crucial step to encourage repository use is for the institution to have an open access policy (Pappalardo, 2007). This should define the role of the repository service (Henty, 2007). “Repositories need clear information on all their policies regarding tagging peer-reviewed/non-peer-reviewed material, their subject coverage, the constituency they draw on for content, their collection and preservation policies, etc” (Johnson, 2008, p. 19). To be truly effective, any policy introduced must be recognised at the highest level in the university: “High-level management support cannot be underestimated…this [is] crucial to establishing policies that can contribute to repository development, take-up and population” (Proudman, 2008).

The closest to complete list of repository policies worldwide is maintained by the ROARMAP (Registry of Open Access Repository Material Archiving Policies - http://www.eprints.org/openaccess/policysignup/), which classifies mandates as institutional, departmental, funder or thesis. A list of Australian repository policies was recently published, which reports that in September 2008: “Five institutions reported they have an institution-wide open access mandate, and eight are planning to implement one” (Kennan and Kingsley, 2009).

To mandate or not to mandate

There has been considerable argument for the need to mandate self-depositing at a national or institutional level, rather than relying on individuals to make the decision to do so (Harnad, 2004; Law, 2006; Sale, 2007). This theory is supported by attitudinal studies showing that 80% of academics would willingly place their work into a repository if required to do so (Swan, 2004).

Mandates provide a clear signal that an institutional repository is a priority for institutional management (Proudman, 2008). However, policies alone do not ensure repository use. While it may seem obvious at first glance that mandates result in compliance, in practice, those institutions which have implemented mandates have faced unanticipated difficulties. The Queensland University of Technology (QUT) spent several years on awareness programs and advocacy before their 2004 mandate was widely understood (Cochrane, 2007). It is important to accompany a mandate with advocacy programs that ensure that the academic community is aware of the mandate.
It seems that requests (as opposed to mandates) do not result in uptake of repositories on a large scale. This has been demonstrated in the US, where a 2005 'request' that researchers funded by the National Institutes of Health (NIH) deposit copies of their work into PubMed Central (National Institutes of Health, 2005) was met with limited success: by 2007 only 10,000 of the as many as 65,000 articles derived from NIH-funded research were available at PubMed Central. Surprisingly, authors sent in only 4% of articles compared to 10-12% submitted by publications (Biello, 2007). The NIH has since upgraded to a mandate requiring deposit within 12 months (Association of Research Libraries, 2008). The NIH Public Access Policy requirement for funded authors to deposit their works into PubMed Central has been in place since April 2008 (Hahn, 2009).

The 2008 round of funding for the Australian Research Council and the National Health and Medical Research Council “encourages researchers to consider the benefits of depositing their data and any publications arising from a research project in an appropriate subject and/or institutional repository wherever such a repository is available to the researcher(s)” (Australian Research Council, 2007). Debate about whether the wording constitutes a mandate is generally focused on the requirement that researchers who do not do so are asked to provide the reasons why not in their Final Report which, it is argued, makes it a mandate. At the time of writing, there have not been any reports back to the ARC for this round of funding, so the impact or otherwise of this clause is yet to be determined.

**Barriers to repository use**

There are both perceptual and practical barriers to academic repository use (Johnson, 2009). Perceptual barriers can include: concerns about intellectual property rights, specifically copyright, worries about quality control and peer review, the amount of time it will take in depositing and the challenge to the publishing status quo (Pinfield, 2002). Practical barriers relate to the act of depositing. There are three steps associated with the act of depositing an item into a repository: locating the final peer reviewed and corrected version of the item, converting it into a format acceptable to the repository (HTML or PDF), and determining the copyright status of the item. All three steps pose a barrier to the voluntary uptake of repositories by academics.

There are two main challenges with locating the author’s final version of the item. The first is a simple matter of language. For example the expression ‘post-print’ is one used widely within the open access community and within library circles. However, the general academic community is not familiar with this term, so using the expression ‘the final peer reviewed and corrected version’ is far more effective (Callan, 2007). In 2008, the National Information Standards Organization, in partnership with the Association of Learned and Professional Society Publishers, developed a set of standard names for journal article versions including: Author’s Original, Submitted Manuscript Under Review and Accepted Manuscript (NISO/ALPSP, 2008). These names are being adopted by repositories.
The second challenge is obtaining the author’s final peer reviewed and corrected version, which many authors discard once the final published version is released. Even those academics who have kept this version (and are able to locate it) may not wish to include it: “Some are not happy to deposit their post peer reviewed version, even if they have kept it. It doesn’t look professional, or the illustrations are kept out of order are two of the complaints” (Scott, 2009 p. 5). This desire of the academic to use the publisher’s version has recently arisen in online discussions.

The second step in depositing an item requires some technical knowledge, and this can be a barrier to adoption. The issue across most disciplines is a lack of time or technical expertise on the part of the academic: "All of the options for self-submission assume a basic level of IT literacy … In any institution there is an enormous range of IT literacy both between and within departments" (Pinfield, 2001). Certainly QUT found that while the instruction to convert files to PDF may seem to be a simple instruction to some people, it can cause difficulties within the general academic population, who may not be as computer literate as assumed and may not have access to the appropriate software (Callan, 2006). There can also be difficulties with entering the metadata about the item. Metadata describes the item and allows it to be harvested, citation linked, and searched seamlessly as if all papers were in a global archive.

However, perhaps the greatest barrier to academic repository use is the third step of determining the copyright status of work. This is discussed at length later in this paper.

Assisting the deposit process

While there have been studies arguing that the process of depositing is simple and quick (Carr, 2005 p. 6), these issues are enough of a problem for some institutions to take on the responsibility of depositing items for the academics. While the author cannot be completely eliminated from the process because of the requirement to locate final peer reviewed and corrected version of papers for deposit, it is reasonable to argue that academics should not have to take responsibility for depositing material:

Faculty are typically best at creating new knowledge, not maintaining the record of this process of creation … Most individual faculty lack the time, resources, or expertise to ensure preservation of their own scholarly work even in the short term (Lynch, 2003).

Clearly it is in the repository manager’s best interest to simplify the deposit process as much as possible. Sydney University has managed this with:

… a whole raft of things such as generating rights/ licences and author addenda to be included in agreements, single sign-on authentication for acquiring information about the author for licence purposes, integrated deposit tools such as those proposed by ICE (Integrated Content Environment) and the Digital Scholars Workbench (DSWB) (Christensen, 2009).
In addition it is helpful to provide information about the repository to the community. For example, Bradford University Repository has developed support materials to: provide the appropriate assistance for administrators to maintain the repository service, for librarians to promote the repository at academic schools, and for contributors. In addition they have provided support staff “available to assist contributors via email and telephone as well as in person at training sessions” (Nieminen, 2009).

Providing support behind the scenes can assist engagement with repositories. When University of Toronto launched T-Space in early 2003, the decision was made to employ a person 12 hours a week to digitise print documents and convert files into Adobe’s PDF format, check copyright and send out permission requests to publishers. "The library's decision to perform archiving is intended to minimize the workload of the faculty, to fill the repository quickly, and to learn about the range of issues that may arise as a result of diverse types of submission" (Chan, 2004 p. 288). At QUT, once the library took responsibility for checking copyright and converting files to PDF, the deposit levels rose dramatically (Callan, 2006).

Having an administrative person undertake the depositing process was identified as a positive in one study where 16% of respondents had declared an unwillingness to self-archive, not on moral or conceptual grounds, but on purely practical ones. They requested “that others carry out the activity of archiving the material produced by the authors (generally, departmental or faculty technical/administrative personnel)” (Pelizzari, 2003, s.6.5).

In a discussion of the implementation of SHERPA Partner (http://www.sherpa.ac.uk/) repositories, involving administrative staff in departments as depositors on behalf of their academics has “proved relatively successful” because it addresses academic concerns about the time it takes to deposit. In addition, by properly briefing these staff they “can act as effective advocates themselves; an especially powerful tool for those institutions with more limited staff resource” (Johnson, 2008 pp. 25-26).

Southern Cross University has made the decision to provide staff to do the depositing rather than promoting any form of self-archiving by academics and researchers. They chose this stance because: “The inaccuracy of citation information, lack of appropriate publication copies, and lack of copyright awareness that publishers’ PDF copies cannot usually be added to the repository were all important issues” (Burn, 2009 p. 3). They report this approach has been well received by the academic community.

Another model is to use subject librarians or their equivalent. The University of Sydney has harnessed its network of Faculty Liaison Librarians to work with the faculties and the repository staff to provide support such as “identifying potential material for archiving, setting up collections, managing copyright issues, providing statistics and metadata analysis” (Christensen, 2009). This approach has also been taken by Southern Cross University whose repository staff: “work with subject liaison librarians who already have established relationships with many researchers and can arrange introductions or contact information” (Burn, 2009 p. 4).
The copyright challenge
One of the greatest barriers to repository uptake is the issue of copyright. Awareness of the copyright status of published work can be vague in the general academic community to varying levels depending on the discipline (Kingsley, 2008). Even when instructed how, academics are often not comfortable with checking the copyright status of their work, as it is time consuming and potentially confusing for them, and is more efficiently dealt with at an administration level (Callan, 2007; Mackie, 2004).

Many publishers do allow archiving of pre- and/or post-prints and the SHERPA/RoMEO website (http://www.sherpa.ac.uk/romeo/) provides academics and administrators with a tool to determine publisher copyright policies. However there is the complicating factor of a changing publishing market, where larger publishers are often buying smaller and independent titles. The self-depositing status of the author of a paper that was published under the imprimatur of a publisher that is now owned by a new company remains somewhat unclear. In addition, as Deakin University discovered, the website is a far from complete list (Scott, 2009).

Different institutions have addressed this issue in different ways. Hahn (2009) argues that a way to “advance toward the desired copyright-sharing environment would be for libraries to engage in conversations with publishers about appropriate rights-management practices on behalf of the authors at their institution” (p. 30). An ideal time is during the negotiations libraries engage in with publishers to license journal products. QUT has undertaken this and the library has a database of publishers from whom they have obtained specific permission, preventing replication of permission requests in the academic community (Callan, 2007).

Palmer (2008) also suggests direct engagement with publishers to negotiate “the right to deposit previously published papers produced by their faculty” and to explore “ways to obtain IR [institutional repository]-deposit rights of their authors through use of author’s addenda and other IP [intellectual property] arrangements.” Another suggestion coming from this three-site comparative study was to create IP specialist librarian positions. This allows informal copyright consultation while more formal IP responsibility is “managed through online legal agreements drafted by library copyright officers and reviewed by university legal counsel.”

An alternative to looking after the copyright checking for academic staff is asking them to sign a copyright release form. The Sydney eScholarship Repository uses this method, which places the onus of checking the copyright status of their work onto the author. Developed by the University’s Office of General Counsel, this form can either be signed or clicked through as part of the repository submission process (Christensen, 2009).

In addition to checking the copyright status of the article, the repository manager must ensure the author and any co-authors are aware that the material is being placed in a repository: “we need permission from each researcher. ... Researchers are reminded that they must not contravene any one else’s rights, i.e. they must ask permission of their co-authors before they deposit” (Scott, 2009 p. 5).
Developing repository awareness

One of the greatest challenges facing a repository manager is developing awareness of an institutional repository within an academic community. Despite the difficulties there is evidence that where only a limited application and effort in advocacy has been taken, institutions have a comparatively lower level of ingest (Johnson, 2009).

Advocacy and awareness is needed not just in the academic community but sometimes also within the institution administration. Pinfield (2002) argues that the repository can raise the profile of the institution, manage research assessment and offers long term cost savings. SHERPA recommends taking advantage of competitiveness between institutions, not just as a technique to motivate academics but also suggests "lobbying of senior administrative members for comparable resources; so as to ensure that each institution was not seen to be lagging behind" (Johnson 2008 p. 24).

Many universities have tried a broad range of awareness techniques. For example, QUT ran a formal launch event, produced press releases in the University newspaper, published glossy brochures and posters, and ran a feature advertisement on the Library web page. In addition they approached academics directly, by emailing all Heads of School to request invitation to School staff meetings to talk about the repository and answer any questions/concerns, providing regular hands-on eprint depositing workshops and identifying and contacting individual researchers with prolific publication output (Callan, 2006).

The Universities of Edinburgh and Nottingham have also used a number of different general awareness methods, including setting up a project web site, producing a briefing paper which is useful for presenting to committees, distributing literature, and using university magazines, including the Library user newsletter. They too have contacted academic staff directly by presenting at departmental meetings and university committees and organising special advocacy events for university staff (Pinfield, 2002).

Developing promotional materials has been a popular advocacy method for spreading the repository message. For example Bradford University has created a conference poster and portable pop up banner as well as “the repository flyer and an additional A5 glossy guide for contributors are used in print format to distribute at academic schools by liaison subject librarians” (Nieminen, 2009). The UK Data Archive, curator of the largest collection of digital data in the social sciences and humanities in the UK, has taken a similar approach (Zuccala, 2008). Unfortunately as described below, these techniques are not necessarily successful.

Another suggestion is to “use milestone events, such as the 2,000th submission, as both celebration and minor additions to the institutional news cycle” (Johnson, 2008 p. 23). As one example, Southern Cross University sends congratulatory emails to researchers with high download counts (Burn, 2009).
Getting started

Pre-populating the repository with material can help to demonstrate the usefulness of the repository. This is referred to as the initial short-term phase by Pinfield (2002) who considers the second (medium to long-term) phase to be obtaining a critical mass of content in place to provide a useful service.

Deakin University used ‘champions’ to help pre-populate the repository - they “prioritised researchers by targeting the 30 most prolific authors from the 2007 HERDC report. This became the top 60 authors, by the time influential academics had been added” (Scott, 2009). Southern Cross University used personal researcher pages from their pre-population efforts to demonstrate during launches of ePublications@SCU which were held on all three campuses by the University Librarian, the Vice Chancellor and prominent researchers (Burn, 2009).

Several case studies have offered different methods for obtaining this pre-populating material for the repositories, from trawling researcher websites with material and asking permission to transfer these to the repository (Andrew, 2003), to finding out which journals allowed the self-deposit of articles, and tracking which academics at the institution have published in those journals (Mackie, 2004). Pinfield (2002) suggests including publications already in the open-access public domain.

A comparison of awareness techniques

Despite the widespread use of leaflets and other mass instruction, an analysis of different types of repository awareness programs has found that publications such as websites and brochures are ineffective, with only 18% of respondents judging websites as effective, slightly less effective than brochures and email messages at 22%. Newsletter articles were the least used and least effective means of communication (Newman, 2007).

This research also found that relatively effective methods are informal (52%) and formal (41%) group discussions (Newman, 2007 p. 13). However, the experiences at Australian universities have been different: “we did a road show of [Deakin Research Online] presentations to the different campuses to raise the profile of DRO. It wasn’t well attended, but some key people did attend” (Scott, 2009). Anecdotally, several repository awareness talks held at the ANU during 2006 and attended by the author were similarly poorly attended by academics.

The comparative study found the “most effective means of delivering the SC [scholarly communication] message to faculty is one-on-one conversations. In the survey, 69% of the respondents indicating that it was somewhat or most effective” (Newman, 2007 p. 13). This finding supports the arguments by SHERPA that: “Winning the hearts and minds of researchers and scholars through exploring what advantages OA [open access] offers them personally is a complex area that requires a bespoke approach, in many cases for each faculty, department or even individual” (Johnson, 2008 pp. 19-20). Of all methods on offer, these techniques require the greatest amount of staff resourcing, which poses challenges for repository administrators.
At Southern Cross University, “ePublications@SCU staff contact academics individually via email or phone and follow up with in-person meetings” (Burn, 2009 p. 4). If choosing to work with individuals it is recommended to target authors who do or may support open access because, “it does not make practical sense to focus advocacy on extremely uncooperative academics” (Johnson, 2008 p. 22). Other related incentives can be beneficial. For example, the University of Minho, in the year after combining a financial incentive with the implementation of a mandate policy, experienced a 390% increase in repository use (Ferreira, 2008).

Providing statistics about item downloads and repository use has been shown to dramatically increase repository uptake. The University of Minho, in the year after providing information that allowed authors to: check how many times their deposited items had been downloaded, identify the countries from which those downloads originated and see how many people read the metadata for the items but had not downloaded the items themselves, had a 60% increase in the uptake of their repository (Ferreira, 2008). This strategy meant the University of Minho was used as an example of ‘good practice’ in a recent report on repositories in Europe (Proudman, 2008).

The QUT has found that statistics provide the valuable ‘evidence’ demanded by scientists when being encouraged to use the repository (Callan, 2006). The front page of the ePrints site links to a ‘Top 50 authors’ statistical page and the top author on that list has had over 72,500 downloads of his work. This ‘evidence’ that people are accessing the papers held in the repository has been a powerful argument to persuade the scientists at QUT to become involved (Callan, 2007).

**Disciplinary requirements**

While the above challenges are experienced across the board in academic environments, in would be foolhardy to think of the research community as a homogenous group. The difficulty with developing diffusion policy within an institution is that the existing values, past experiences and needs of academics change according to the discipline. Rather than a single social system, academics consist of a series of small, disparate groups with distinct differences (Kingsley, 2008). It is for this reason that a uniform advocacy or ‘roll-out’ program for a given institutional repository is unlikely to succeed.

Experience is showing that it is difficult to penetrate centuries of established academic publishing practice, even with a strong ‘pitch’. Expansion is being held back by a lack of knowledge about, and a trust in, open access dissemination: “Many researchers are not sure how Open Access works, fear plagiarism and loss of control of their work” (Christensen, 2009). Ultimately, any repository will only be successful if it provides a benefit to its user:

> Messages about the altruism of open access or the rising journals prices seem to make little impact. What really gets their attention though is a demonstration Google search in which I enter three words and a QUT eprint floats to the top of the return set of 2.5 million hits (Callan, 2006).
Pinfield (2002) suggests answers to the researcher’s question: ‘what is in it for me?’ could be ease of access, rapid dissemination, open access interoperability and value added services. Sydney University has worked “on highlighting the benefits of expending the effort to archive material. This is especially difficult in a ‘time-poor’ environment, so a good narrative and a war chest of solid examples is essential” (Christensen, 2009).

One way of addressing this situation is to adapt the repository to suit the communication behaviours of different academics. Incorporating a repository into already established work practices can increase positive attitudes to, and therefore use of, a repository. This idea of working ‘upstream’ in the research process, assessing and reassessing depositor needs and evaluating repository applications is put forward by Palmer (2008) as a factor in the success of developing repositories. Chan (2004) suggests developing communities for appropriate groups with their own work-flow.

Incorporating the repository into the reporting requirements already established within an institution can also encourage repository use. The University of Melbourne has chosen a holistic approach, attempting to tie its repository (called UMER) in with the university’s administrative, financial and reporting systems. The aim is that users enter their details once and the information is then available in all relevant parts of the system, with the goal of linking funding, research, data, publications, access, citation, impact and assessment (O’Brien, 2006).

Creating personal web profiles for researchers provides a major benefit for users of the repository. Academics can add the url for their personal page to their email signature, for example. This has been a successful strategy for the University of Rochester (Foster, 2005), QUT, and the University of Melbourne. At Southern Cross University: “The Digital Commons repository software integrates with another bepress software product called Selected Works. This product enables institutions to create a scholarly publications page to showcase the work of individual researchers” (Burn, 2009 p. 3).

Recently, the University of Rochester has moved to a new repository platform called irplus, developed internally to allow for more integration with the academic workflow. In addition to providing researcher pages and download statistics, the repository facilitates collaborative authoring and versioning, as users have a web based workspace where they can share and collaborate on files with other users and have their files backed-up on a regular basis. In addition users can publish their files into the system, with the ability to customise the way these files are presented (University of Rochester, 2009).
Conclusion

In summary, there are steps that can be taken at both the institutional and repository management level to increase repository use. The institution can demonstrate its commitment to the repository by developing and supporting an open access policy that defines the role of the repository service. This policy needs to define who can deposit material and what material is accepted. Mandates for depositing, either from funding bodies or from the institution, result in a higher uptake of repositories than requests or 'encouragement'; however, regardless of whether a mandate is in place, the repository management team must engage in an advocacy program and provide assistance to the academic community to ensure usage of repository services.

Advocacy programs can take many forms, ranging from those aimed at the wider academic community such as formal launch events, posters, flyers and web advertisements down to discussions with individuals. Comparative analysis shows that while all of these techniques have some effectiveness, it is the time consuming one-on-one advocacy that is most effective. Training up liaison staff within the library can provide a team to conduct this work. Repository managers should also consider the need to implement advocacy programs aimed at their institutional administration to ensure ongoing support.

Any advocacy program will be assisted by a demonstration of how the repository can be of benefit to the user. For newer repositories this raises the challenge of ensuring there are a number of items deposited before embarking on a wider advocacy program. Successful methods of pre-population include targeting prolific authors, transferring material from researcher websites, depositing articles from those journals which allow it, and adding publications already in the open-access public domain.

Repositories which provide assistance with the deposit process enjoy a higher uptake from the academic community. Obtaining the author’s version of the final document will remain difficult until the culture of open access dissemination is more widely understood in the academic community, but the repository team can help in other ways. Accepting any type of file format and converting it for the user will help, as will generating the more complex metadata for them. However the greatest challenge for the user is dealing with copyright permissions. Those repositories which undertake this task for the depositor enjoy a higher level of engagement.

Finally, the repository will be more enthusiastically embraced if it is useful to the academic by providing appropriate assistance to their regular workflow – researcher pages and download statistics are a good start. Good luck.
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