Research Online: Digital Commons as a Publishing Platform at the University of Wollongong, Australia

R. Daly* M. K. Organ†

*University of Wollongong, rdaly@uow.edu.au

†University of Wollongong, morgan@uow.edu.au

This article was originally published as Daly, R and Organ, M, Research Online: Digital Commons as a Publishing Platform at the University of Wollongong, Australia, Serials Review, 35(2), 2009. Original article available here.

Research Online: Digital Commons as a Publishing Platform at the University of Wollongong, Australia

Rebecca Daly and Michael Organ

Abstract

Since 2006, Research Online, the University of Wollongong's open access institutional repository has utilised Bepress' Digital Commons software to make available published research outputs and digital theses. This article discusses the outcomes of recent academic demand for its use as a publishing tool of university journals and conference proceedings. The Journal of University Teaching and Learning Practice is provided as an example. Digital Commons includes the editorial management software, EdiKit, which assists in managing submissions, editorial functions, and peer review. Also considered are changes to scholarly communication patterns arising out of the new open access, electronic only, publication regimes.

The Open Access Debate

Institutional repositories can provide simple self-publishing solutions for academic and scholarly material. Introduced during the early part of the decade to facilitate access to previously published research outputs, such as journal articles and conference papers, institutional repositories have evolved during their relatively short life span to a point where they are now actively promoted as publishing platforms that accommodate a wide variety of formats.1 This use – as a tool facilitating the scholarly publication process – is in addition to their primary role as digital archives, storing and making available material which had previously only been available in print or in limited access through password-protected library databases.

Content is everything with institutional repositories, and the push by site managers to populate them with copyright-cleared or copyright-free material has moved the sector in the direction of self-publishing initiatives such as, in the case of universities, in-house journals and the proceedings of on-site conferences. All of these offer the hope of a secure supply of content into the future. Software upgrades and access to an almost unlimited storage capacity has encouraged this expansion of repository scope and usage in recent years. Limiting factors are primarily the availability of skilled staff to make it happen and the will of organisations, academics and copyright holders to allow it, whether this is via mandates, licences, policy statements or individual initiative. The example of the mandate obtained by Australia's Queensland University of Technology in 2003 is ample proof of this, with a 65% plus deposit rate of research outputs having been attained.2 The will of the organisation to support the repository is strongly evident in this case. This will is also manifest in the academic environment through the ongoing battle between the supporters of open access and those in opposition due to vested interest or a particular ideological stance. Many publishers and copyright societies sit in the latter group opposed to open access whilst proponents primarily include academics, university management and government, all

of whom are keen to see the products of research freely dispersed throughout their community, following on the long tradition of research endeavour and unfettered access to the scholarly record.

Of course, even some academics are opposed to open access, fearful that it may threaten the tried and true peer-review publication process, a misguided notion actively promoted by the publishing fraternity. Open access is no such threat to scholarly publication. Rather, it has shown itself to be a supplement to the traditional peer-review process and, in fact, harks back to the original academic publication philosophy of free and open access to all, with the only difference being that the old model of a print item available on the shelves of every academic library is now supplemented, or replaced, by one in which a digital copy is available universally on the Internet and located through search engines such as Google and Yahoo. Added to this is the fact that repositories can fully replicate the peer-review publication process rather than disregard or dilute it. There are real benefits for universities, public research institutions and government departments in actively promoting open access and the repository movement. In the everyday dealing of this philosophical disagreement, it has increasingly fallen upon librarians to bring this promise to reality.

Repositories — Bringing Down Walls

The recently released report of the Association of Research Libraries Digital Repository Task Force was unambiguous in highlighting the fact that "delivering repository services is a crucial function of research libraries."3 Yet, less than half a decade ago such a statement, if it were at all understood, would have been largely ignored. Times have now changed, and research support and active engagement with campus research services offices and the research process are entering the realm of core library business, made more palatable by the promise of extra funding for libraries and research centres if they take on such initiatives. The chance to increase visibility among senior administration and the on-campus research community is an attractive option for academic libraries. In addition, tapping into research funds can prove a lifeline for such organisations, especially during times of tightening budgets, global recession and ever rising database subscription costs. Traditionally universities have engaged in a wide variety of publishing ventures, ranging from the production of departmental working paper series and university promotional material, such as annual reports and student handbooks, to supporting peer-reviewed scholarly journals and conference proceedings, and in some instances hosting the output of professional university presses, which may or may not release material independent of the institution.

Open access and digital archiving have only recently been thrown into the publication mix, bringing with them the inherent problems of copyright, publishing regimes and antagonism from publishers who see institutional repositories as a threat to their business profitability and long-term sustainability. In such an environment repository managers need to tread warily and act strategically. As ever, their suite of actions must be both proactive and reactive, ensuring their repositories work efficiently and are visible, whilst taking direction from, and supporting, academic initiatives in this area. With the publication of research outputs becoming such an important part of academic life – the very bread and butter of universities and research institutions –

repository involvement in the publication process is a strategic desirability, if not an imperative. Recent advances in repository software systems, both open source and proprietary, and an exponential leap in hardware storage capabilities, have made this task easier to plan and implement.

The proliferation of institutional repositories arose in part out of the so-called “scholarly communication crisis,” which, by the end of the nineties, was distinguished by ballooning serial subscription costs and increasingly restrictive database licences, resulting in a limiting of access to research outputs for university students and academics, to the exclusion of all others.4 These “affordability” and “accessibility” constraints caused concern amongst the worldwide community of researchers due to the negative impact upon research outputs and their citations. This was a situation which could not be allowed to continue, and academic researchers were amongst the first to raise concerns. University and research centre administrators also quickly realised that such restrictions would lead to a diminished return on investment for their institutions, and, as such, they agreed that action needed to be taken to support alternative forms of scholarly communication.

The development of the California Digital Library eScholarship repository at the beginning of 2002, utilising Bepress software, in collaboration with the University of California, and the launch later that year of dSpace, an open source repository system developed by Hewlett Packard and MIT, were both landmarks in the development of the institutional repository and open access movements. At a time when a burgeoning Internet and the creation of powerful search tools such as Google were opening up the possibilities of a truly unrestricted scholarly communication regime, concerns arose from students, academics and research staff that password-protection walls were making those very same resources inaccessible. Institutional repositories would play a role in bringing those walls down by making content accessible in open access locations.

Of course, the early emphasis was on archiving material which had already been published and making it freely available, a process which continues to be the primary use of institutional repositories worldwide. However, unless the next step was taken and repositories were made an integral part of the publishing process, then the scholarly communication crisis would largely continue. While open access repositories have in some way eased the accessibility issue, the fact remains that large sections of the research community do not have access to research outputs and the affordability issue remains as subscription database costs continue to rise and major publisher databases grow bigger and become even more indispensible.

The proliferation of institutional repositories and their relative ease of use revealed to many the value of “old” material, such as research outputs which had never been digitised, but which were nevertheless useful to present-day researchers. Formerly only accessible in print from the local library or through interlibrary loan, easy discovery via Google and Google Scholar increases their visibility, and the associated download statistics verify their usefulness. All of which highlights the fact that whilst publishing is primarily about the here and now and bringing new material to the market, the research process requires access to both the old and the new. The concern over the loss of access to research material with the ending of a subscription to a database also influences institutions to develop their own repositories in order to

house and archive local output. If such a system were universal, the threat of loss of access to subscription-based material would be greatly reduced.

Beyond serving as digital archives, other uses have been suggested, including institutional repositories as publishing tools; however, this idea has been slow to take off. Whilst they have been used from the outset to publish previously published and unpublished manuscript material, such as theses, they have not made substantive inroads into the realm of scholarly journal publication. A belief, supported by publishers, that producing journals electronically in institutional repositories would "lead to a lowering of average quality owing to bypassing of publishers' peer-review and quality controls" is still given widespread credence within the academic community.5

In general, publishers have been antagonistic towards the repository movement. They have actively worked against them by enforcing the restrictive copyright that they hold and giving only token support to the concept of open access. Of course there are exceptions, but they are few. In their communication with the academic community publishers have presented repositories in a negative light or downplayed their potential uses and benefits, promulgating the view that "institutional repositories would have either no impact or a neutral one on scholarly publishing."6 The belief by copyright collecting agencies, such as CAL in Australia, that users should pay is a philosophy in direct opposition to the free flow of research outputs which lies at the heart of the open access movement.

Two recent documents from the Association of Research Libraries (ARL) have highlighted the changing dynamics within the university sector in regards to the evolving importance of institutional repositories and their expanding uses. The ARL's emphatic declaration that "dissemination [of research outputs] is thus a core responsibility of the university" places open access journal publication and in-house digitisation programs at the forefront of institutional strategic considerations over the coming decade.7 By tying scholarly communication and open access initiatives to the core organisational mission of dissemination, the ARL is recognising the evolution of the repository movement. It is also promoting the more efficient and effective publication models now available via institutional repositories, noting that "while such models must preserve the critical qualitative components of traditional publishing, they can and should go beyond them by adopting the benefits of the networked environment."8

Peer-review journal publication software has been available since at least 1999. Hosted facilities, such as eJournal Press, are proving popular with publishers and societies alike, including the Nature Publishing Group, Palgrave Macmillan, the American Journal of Rhinology and the American Institute of Physics.9 Only recently have cheap, efficient and simple examples come on the market, making their use in association with an institutional repository a practical consideration for cash-strapped editorial committees. Microsoft's ejournal Service is in beta testing10 and SPARC's Journal Management Systems Web page lists twenty-eight such packages, ranging from open source stand-alone programs to fee-for-use or purchasable proprietary software.11

Digital Commons as a Publishing Platform

One proprietary software package – Bepress' Digital Commons12 – began life in 2002 as a publishing tool known as EdiKit. With the ability to accommodate the complete journal publication cycle – from article submission through peer review and final publication available open access as a pdf – it is a powerful piece of software. The EdiKit journal management functionality is the same as that within the Digital Commons platform. The main difference between the two is that while EdiKit is intended for journal publishing alone, Digital Commons manages a broad range of research outputs.13.

By March 2009, there were eighty-two Digital Commons repositories operating world-wide, with the majority in the United States, though examples may also be found in Australia, Great Britain, Ireland, Japan and New Zealand.14 Mounted on those sites were 152 journals, ranging in quality and content from undergraduate student journals (e.g., Bond University Student Law Review15) to fully peer-reviewed scholarly academic journals of international standing.16 The range and scope of journals published via Digital Commons and their ever increasing numbers, with ten added during February–March 2009, reflects the trend towards in-house publication. Whilst universities make up the vast bulk of Digital Commons sites (92%), research centres and government departments are also making use of its publishing tools. The South Australian government's Department of Health SA Health Publications site houses its annual reports, media releases, policy statements, fact sheets, journal material and research-based publications going back to the 1970s.17 In this case, Digital Commons is very much a publishing engine and digital archive, free of the copyright constraints experienced by the university sites where the outputs have usually been published externally, and copyright in the final output is held with the publisher. The Australian Council for Educational Research has also recently implemented a Digital Commons site and is using it to publish the Australian Journal of Education.18

The extent to which the EdiKit facility is utilised within the collection of live Digital Commons journals is unknown, though it is clear that, whether journals are uploaded to Digital Commons pre- or post-publication, the software provides a consistent presentation of journal content in the online viewer. The public interface of the journal can be customised to suit the graphical and formatting preferences of the journal. The administrative functionality that sits behind the public view is accessible by an account login function that recognises the access rights of the user. When authors and reviewers login to their account they are limited to particular functions related to their roles. When editors login they are able to access the range of administrative functions that facilitate the publication of articles. Although a journal using the full EdiKit functionality requires that key decision points are completed before allowing articles to be published, a journal that does not use the EdiKit functionalities can have articles directly published online, bypassing key editorial steps such as assigning a reviewer, accepting or rejecting the article, and seeking author approval for publication. Bepress provides technical support to repositories using the Digital Commons software, and this support includes configuring the system to suit the needs of the client. Bepress set up a test site in which staff of the University of Wollongong's open access repository Research Online tested the functionality of EdiKit using multiple user accounts to gain a thorough understanding of the capabilities of the system. The University of Wollongong Library had archived four journals in its Research Online repository before

deciding in 2008 to pursue the full implementation of the EdiKit system via the Journal of University Teaching and Learning Practice.19

JUTLP Case Study

The Journal of University Teaching and Learning Practice (JUTLP) is a peer-reviewed journal published twice yearly since 2004 by the University of Wollongong. Recently, the journal has published all content in open access format via a Web site (http://www.jutlp.uow.edu.au) maintained by the Centre for Educational Development and Interactive Resources (CEDIR) at the university. Following the initial digital and print production of the first issue, the journal went completely digital. As with the production of many scholarly journals, the peer review process was managed by a core editorial group of editors and a production coordinator. By 2008, the complexity of this process caused the editorial board to consider if it could be streamlined by the use of a publication software package. Independent investigations discovered EdiKit and, upon contacting Bepress, the board learned that the package was already available locally within the Research Online site. After discussions with Research Online staff, it was decided to test its capability.

In 2008, Research Online began archiving JUTLP content as a journal series within the repository (http://ro.uow.edu.au/jutlp/). This was conducted as a straightforward upload process without making use of the editorial functions of the EdiKit software, as a full investigation of the functionalities of EdiKit had not yet been explored. Initial investigations required an understanding of JUTLP peer-review and publishing practices to determine if EdiKit could provide a satisfactory degree of emulation. A thorough process document was created outlining the common functionalities and potentialities of EdiKit complete with screen shots from within the system. This document was presented to the senior editor and CEDIR staff with a demonstration of the procession of one article from submission through to publication. During the demonstration many questions were raised concerning the process of making the transition from manual administration of a journal, to a primarily automated management environment. Questions included:

• Can the system automatically apply sequential page numbering across articles?

• Can reviewer names be added to the final published web page for each issue?

• How do reviewers undertake their review if the system sends them a PDF of the article?

There was a definite need for the system to be flexible enough to accommodate the different behaviours and preferences of JUTLP editors and reviewers. One reviewer may be content to review from a PDF, but others prefer to work within a word processed document. The Research Online staff believed the best approach was to break down the journal's current practices to accurately identify what happens to a paper each step of the way, who are involved in those steps, and match this knowledge to the capabilities of the EdiKit system. The resulting investigation yielded a process document that mapped JUTLP practices with EdiKit functions, often using creative work-arounds to match an action within the system to a real-life procedure.

For example, a common JUTLP practice is for the associate editor to undertake an initial review of submissions to ensure they are suitable to go through to peer-review. Papers that are rejected at this stage are sent to the senior editor, who contacts the author with reasons for the paper's rejection. Clearly, this step is an exceptional one. Papers that will be reviewed do not need to be sent to the senior editor. A process had to be contrived that would allow for this extra step without suggesting it be done outside of the system. The importance of ensuring the majority of the publishing process is undertaken within EdiKit, was aligned with the need to present its value to JUTLP as a streamlined, automated publishing management system. The system did exhibit a good degree of flexibility and, in this instance, a suggested process was devised that allowed for the associate editor to use the 'Assign editor' function to allocate rejected papers to the senior editor. Identifying how the journal's staff prefer to undertake their publishing processes was an important early step in implementing the EdiKit system.

Another step was customising system outputs to suit the standards of the journal and the messages it prefers to relay. As an automated system, EdiKit produces system-generated emails to editors, authors and reviewers to prompt each user to undertake the necessary actions required at that stage of the progression of a paper. These emails can be customised to permanently replace the default system-generated emails and to contain the journal's preferred messages. In addition, the journal site can comprise multiple informational pages containing policy, editorial board details, instructions for authors, and latest news. The content of these pages can also be customised to suit the journal's preferred messages. Customisable page text and emails were compiled and presented to JUTLP editors for editing. With these initial changes to the system output, it was decided that JUTLP would be prepared to start the full functionalities of the EdiKit system.

As of April 2009, JUTLP editorial staff are implementing the EdiKit peer-review package. Due to the complexity of the system and the specifications of the JUTLP editors, it has been a slow, intricate process, necessitating the education of library staff and those associated with JUTLP, both from the editorial and technical sides. The Research Online team realised that implementing customised interfaces and processes is very involved and requires significant input from the journal's editorial board. It is vital that repository staff sit down with journal editorial staff and determine exactly how they prefer to undertake the publishing process. The creation of a procedure document aligned with the journal's preferred practices is essential for seamlessly guiding the journal team in their transfer to the new automated system. Their input in customising the system text outputs is also vital to delivering a customised product.

Facilitating Scholarly Communication

The traditional scholarly publication model has changed little over the centuries — research is undertaken and completed; a paper is written and presented at a conference or meeting; the output is subsequently published, usually in refereed form in a journal, sponsored by a learned society. The journal is then used to communicate findings to the broader research community. Whilst this process remains substantially

in place, the means by which it is implemented has changed significantly in recent times, and continues to evolve. The Internet has brought about the most profound transformation of scholarly communication via the ubiquitous nature of email, search engines, such as Google, and digitization of research outputs which are then made available on closed or open access.

Institutional repositories offer academics a further freeing up of their ability to promote their work and communicate with their colleagues. Universities, research groups, and journal publishers are actively implementing online journal management software systems similar in functionality to the EdiKit tool. Within Australia there has been some implementation of these softwares. Some universities use them simply as publishing tools after the fact, much as Research Online has to date, by not making full use of the editorial management functions. For example, in 2008 the University of Melbourne implemented Open Journal Systems – an open source software – to publish in-house journals that had previously been peer-reviewed.20 Other universities are hosting the full editorial management process through their repositories. The University of Technology Sydney (UTS) implemented the UTSePress system in 2003 to allow UTS journal editorial teams autonomy in journal management.21 There are currently eleven UTS journals now using the UTSePress system.22

This trend reflects the increasing role academic libraries are playing in facilitating not only the open access of research outputs, but the ability for journal editors to "go it alone" in publishing their work. As we have seen, self publishing is becoming more common. No longer do academics need to rely on learned societies or large publishing houses to publish high quality scholarly journals or the proceedings of symposia and conferences. A simple Web site can be used for this, or, better still, a fully fledged online publication suite, such as that offered by EdiKit within Digital Commons, or the system used by publishers, such as Elsevier, to facilitate publication of this article.

References

1. Paul Royster, Publishing Original Content in an Institutional Repository, Serials Review 34 (2008), pp. 27–30.

2. Tom G. Cochrane and Paula A. Callan, Making a Difference: Implementing the eprints mandate at QUT, International Digital Library Perspectives 23 (3) (2007), pp. 262–268.

3. ARL Digital Repository Issues Task Force, The Research Library's Role in Digital Repository Services, Association of Research Libraries, Washington, D.C. (2009), p. 51.

4. Leslie Chan, "Supporting and enhancing scholarship in the digital age: the role of open access institutional repositories," Canadian Journal of Communication 29, no.3 (2004), http://www.cjc-online.ca/index.php/journal/article/viewArticle/1455/1579 (accessed March 14, 2009).

5. Mark Ware, Institutional repositories and scholarly publishing, Learned Publishing 17 (2004), pp. 115–124.

6. Ibid., 124.

7. Association of American Universities, Association of Research Libraries, Coalition for Networked Information and National Association of State Universities and Land-Grant Colleges, “The university's role in the dissemination of research and scholarship, Research Library Issues 262 (February 2009), pp. 1–5.

8. Ibid.

9. eJournalPress, eJournalPress, http://www.ejpress.com/ (accessed March 17, 2009).

10. Microsoft, ejournal Service – Alpha Preview, http://journal.mssandbox.net/LearnMore/GetStartedPage.aspx. (accessed March 17, 2009).

11. SPARC, Journal Management Systems, http://ww.arl.org/sparc/publisher/journal_management.shtml (accessed March 17, 2009).

12. Digital Commons, The Berkeley Electronic Press – bepress, http://www.bepress.com/ir/ (accessed March 17, 2009).

13. Jean-Gabriel Bankier and Irene Perciali, The Institutional Repository Rediscovered: What Can a University Do for Open Access Publishing, Serials Review 34 (2008), pp. 21–26.

14. Bepress, List of Digital Commons sites, http://digitalcommons.bepress.com/institutions.html (accessed March 12, 2009).

15. Bond University Student Law Review, http://epublications.bond.edu.au/buslr/ (accessed March 10, 2009).

16. Bepress, Digital Commons Journals, http://digitalcommons.bepress.com/journals.html (accessed March 12, 2009).

17. Department of Health, Government of South Australia, South Australian Health Publications, http://www.publications.health.sa.gov.au/ (accessed March 17, 2009).

18. Australian Council for Educational Research, ACERSearch, http://research.acer.edu.au/ (accessed March 17, 2009).

19. University of Wollongong, Research Online, http://ro.uow.edu.au/ (accessed March 17, 2009).

20. Jane Garner, Shirley Sullivan and Eve Young, “E-Publishing at the University of Melbourne Library: a case study,” Information Online 2009: ALIA 14th Exhibition and Conference, Sydney, Australia, 20-22 January 2009,.

21. UTS Advancing Scholarly Publication, UTSePress, Sydney, University of Technology (2003), pp. 3–4.

22. UTSePress system, http://epress.lib.uts.edu.au/ojs/ (accessed March 17, 2009).