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Strategies for gaining and maintaining academic support for the institutional open access repository

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Introduction

QUT ePrints is the open access institutional repository of research outputs for Queensland University of Technology (QUT) which is based in Brisbane, Australia. QUT ePrints was launched in 2003 and has since grown to become a large and content rich collection. It has consistently ranked 1st or 2nd amongst Australian repositories and variously 19th to 30th (currently 21st) amongst international repositories over time, as ranked by the Ranking Web of Repositories (Webometrics). The purpose of this paper is to communicate strategies for gaining and maintaining academic support for the repository. Using a self-deposit (and not mediated) academic engagement model for populating the repository, mechanisms promoting and supporting academic engagement are vital to repository success. Strategies used at QUT are discussed, including advocacy; policy; library roles and staff development; information, promotion, training and support; populating; and system features such as integration, usage statistics and citation data, are discussed.

Advocacy

A successful open access (OA) repository implementation across a large institution begins with high level advocacy for the initiative. There needs to be agreement amongst senior executives that the institution is going to wholeheartedly support an OA policy. Research leaders, Faculty and School leaders, IT leaders, and Library leaders need to be informed and active in the promotion of OA.
AO and the institutional repository need to be integrated into the core business of the institution. There should be a committee at various levels responsible for the vision, the plan and implementation and reporting. OA and repository issues need to be regular agenda items on these committees in order to share ownership, make decisions and keep leaders informed of development. Leaders need to be receptive to including OA and repository issues on their local departmental committees to ensure awareness and support trickles down to all levels. Advocacy can happen at many levels across the institution. It has proven both important, and highly beneficial for the Library to work with the Office of Research on advocacy, and policy, compliance and service development.

Policy

The development and implementation of a policy framework supporting OA is critical to success. Relevant policies include an Open Access policy, Intellectual Property Policy, Copyright Policy and Library treatment of theses policy. Callan (2004) describes the development and implementation of the QUT OA policy and Cochrane and Callan (2007) described the difference that the addition of an OA mandate made at QUT.

The OA policy supports advocacy, academic performance management and specifics regarding outputs, timelines and responsibilities. It is probably best applied at the institution level, although a number of policies at faculty or school level could in theory achieve significant goals, although perhaps not as coherently. Such a policy should include aspects including the institution's position on open access (green and gold), a description of the institutional repository, a mandate for the deposit of fulltext works, responsibilities for deposit, timelines for deposit, and reference to procedures.

QUT first published its QUT ePrints policy in 2003 when it was the first such institutional repository in the world to mandate deposit of fulltext works. The policy is now the QUT ePrints repository for research output policy. It has been developed through numerous iterations to more clearly define which research output types are mandated for inclusion into the repository (refereed journal articles, conference papers and theses) and which are optional (unrefereed articles, and books, book chapters, creative works and datasets). Having policy which mandates fulltext deposit is important for a number of reasons:

- It states a clear institutional position to publishers and academic staff alike
- It elevates the decision making, compliance and responsibility to the institutional level (removing the need for academic decision making and negotiations
- It elevates communications and negotiations with publishers to the institutional level (removing academic staff from this)
- It acts as a performance management tool to ensure academics deposit fulltext

Armbruster (2010) surveyed a number of institutions including QUT regarding OA policy development.

The Intellectual Property policy can be used to provide additional policy support to open access. QUT's Intellectual property policy is perhaps unusual amongst institutional IP policies in that:

"QUT as an employer is the owner of copyright where the work is created by staff members in the course of their employment. QUT's ownership of copyright applies to both academic and professional staff."

and

"Provided that QUT does not have contractual obligations to a third party which would prevent QUT effecting such an assignment, QUT assigns the right to publish scholarly works to the creator(s) of that work. The assignment is subject to a perpetual, irrevocable, worldwide, royalty-free, non-exclusive licence in favour of QUT to allow QUT to use that work for teaching, research and commercialisation purposes and to reproduce and communicate that work online for non-commercial purposes via QUT's open access digital repository."

This is a very powerful policy tool supporting OA because it makes prior claim to all QUT generated research outputs to the University. It allows authors to refer to QUT as the copyright owner when dealing with publishers and copyright agreements. Publishers cannot force authors to agree to copyright transfer agreements and sign away their copyright, because authors do not own the copyright. Should authors knowingly or unknowingly sign a copyright transfer agreement in order to get published in a journal of choice, there remains the prior right which could be enforced. The Copyright policy provides support.

At QUT the Library treatment of theses policy states that:

"The QUT Library is responsible for making accessible a digital version of higher degree research theses through QUT ePrints - Digital Theses".

The policy, together with the [form and guideline on submission of a thesis](#) ensure that QUT theses are made available on open access, unless an embargo is approved, usually for commercial purposes.

Library roles and staff development

With the Library being the lead agency in the provision of the QUT ePrints repository and information and support services to academic staff and HDR students, it is especially important that relevant library staff are highly aware of and conversant of University OA objectives, policy, infrastructure, services and benefits. The OA movement has a long history, marked by achievements, setbacks, misinformation and emotion.

QUT Library has adopted the Information Technology Infrastructure Library (ITIL) service management framework and roles are discussed in this context.

The Associate Director, Library Services (Information Resources and Research Support) is the Business Owner for QUT ePrints. This role requires an understanding of OA developments and supporting infrastructure and services in order to set strategic direction and oversee the development of the service description, service assessment and service roadmap.

The Library's Scholarly Communication Librarian is the Service Manager and is responsible for the provision of advocacy and outreach services to support QUT academics and HDR students to ensure new scholarly communication models are appropriately adopted. The position holder is an expert in green and gold open access. Borchert and Cleary (2010) also provide an account of gold open access support at QUT.

The Repository Resource Librarian is responsible for the development and management of repository collections of metadata records and fulltext items. The position manages the workflow within Library Resource Services for the processing of self-deposits by academics. Library Resource Services staff have an understanding of the ePrints workflow, resource types and the open access policies of publishers as provided by Sherpa-Romeo and QUT's own OAKList for Australian publishers.

Liaison Librarians work in faculty-based teams at QUT and are responsible for learning support, information resources management (collection development) and research support and a team member has the lead responsibility role for each of these portfolios within each team, although all members do provide services across all portfolios. All members have an understanding of OA and provide information and advice to researchers in the form of the research consultation service. Librarians need to know about OA, benefits of OA and be able to assist with training in how to deposit to QUT ePrints. Liaison Librarians with the lead role in research support come together in the Research Support Working Group to implement strategy, develop services and share expertise.

The QUT ePrints repository is managed by the Library eServices section which specialises in providing technology based information access services including also the library web site, catalogue and numerous other online information systems. Staff there need to be conversant with project management, information access, open access, GNU ePrints repository and web design.

Since 2003 QUT Library embarked on a concerted staff development effort to ensure staff at all levels can properly support academic engagement in QUT ePrints. The Library's Research Support Team provides regular refreshers for librarians to keep up to date. Librarians learn from each other as co-presenters at academic training events. Information updates from various Council of Australian University Librarian (CAUL) groups are shared with librarians. Borchert and Callan (2011) provide an

overview of the staff development program for research support services, which includes QUT ePrints.

Information, promotion, training and support

QUT Library has implemented a range of information, promotion, training and support strategies to maintain momentum in academic engagement with QUT ePrints. Information is provided on a range of research support services, scholarly communication and publishing, ePrints, other repository services, copyright, workshops which may be registered for online, and workshop resources such as slides and handouts.

Related information resources include:

- Research support services http://www.tils.qut.edu.au/initiatives/researchsupport/
- Scholarly communication http://www.tils.qut.edu.au/initiatives/researchsupport/comms/index.jsp
- Scholarly publishing http://libguides.library.qut.edu.au/scholarlypublishing
- QUT ePrints http://eprints.qut.edu.au/
- Digital Repository http://www.digitalrepository.qut.edu.au/
- Digital Theses http://www.library.qut.edu.au/services/adt.jsp
- Copyright guide – theses http://www.tils.qut.edu.au/copyrightguide/publishingan/australiandi.jsp
- Workshops and appointments https://www.library.qut.edu.au/events/
- Research support resources wiki https://wiki.qut.edu.au/display/tilsrsr/TILS+Research+Support+Resources

Promotional activities happen year round and range from presentations at School and research group meetings, to generic sessions available to all research students and staff.

Regular events featuring ePrints include:

- The annual or biennial "*Making connections: innovation in research at QUT*" which is a seminar is held, featuring academic speakers and which often features ePrints.
- The annual or biannual *TILS Taster*, the Division of Technology, Information and Learning Support's which features a stand showcasing ePrints
- *Open Access Week* celebrations which feature academic and support staff presenting successes with ePrints and other open access initiatives
- Monthly ePrints deposit training sessions.

The Faculty of Education held an ePrints promotion activity in 2011 and 2012 by which all academics who deposited fulltext received a beverage voucher. The Faculty of Health held a competition in 2012 in which every academic who deposited a fulltext item went into the draw to win $1,000 towards attending a conference of their choice. The Faculty of Science and Engineering employed a research assistant to door knock every academic in the faculty, offering to find author manuscripts on their computers and do the deposit for them.

Ongoing support is provided through multiple channels via:

- *AskQUT* – the University's online enquiries and client relations channel which also features a Q&A knowledgebase
- *Library Research Support Team* – either directly to known staff or via the generic ePrints email account

- *QUT ePrints* – generic email address which is read by Library Resource Services staff who undertake the deposit review workflow prior to OA publication
- *Liaison Librarians* – are well know to researchers in faculties, schools and institutes
- *Library Learning and Research Desk* – researchers are more likely enquire by phone than visit the library in person

Populating the repository

Populating the repository with both metadata records and fulltext items is of course a primary focus. There are many institutional repositories making only limited content available. As of January 2013 QUT ePrints has about 41,300 records and 23,900 (or 58%) with an item(s) attached. Deposit of items has accelerated in recent years with 87% of 2012 journal article and conference publications now having fulltext attached. About 8% of records have fulltext attached which cannot be made available on open access because of publisher copyright restrictions.

The decision whether to adopt self-deposit (by academics) or mediated deposit (probably by library staff) is a fundamental question to be answered when developing the academic engagement strategy. By self-deposit, academic staff, or research assistants or faculty support staff enter Dublin Core metadata using online web forms. Fulltext items can also be attached via the online forms.
Advantages of the self-deposit option may include: it is more scalable; ensures academic buy-in, ownership and consent; and requires less support staff. Considerations include: it requires training and support; deposit is contingent on busy academics prioritising it amongst other responsibilities; and library staff will probably still need to process records and deposits prior to making them open access. Advantages of mediated deposit may include: library staff have more control; a second layer of processing is not required while disadvantages include: it precludes academic buy-in and ownership; and requires library staff to repeatedly approach academics for fulltext items.

In Australia the Government operates two research assessment exercises – the Higher Research Data Collection (HERDC) (DIISRTE, 2013) which assesses the quantity of research outputs and the Excellence in Research for Australia (ERA) which assesses research quality. The populating of QUT ePrints is critically linked to these processes as the systems are integrated as explained below. Academic staff are generally aware that research assessment exercises and some research funding is provided on the basis of these research assessment exercises so this creates incentive to populate ePrints. A dark instance of the ePrints repository is used to store metadata and fulltext items to support the peer review process for the ERA research assessment exercise. For this purpose, the Library and Office of Research have decided to populate the repository with published versions of research outputs only when required to do so for assessment purposes; otherwise the Library seeks deposit of author manuscripts only, and links to publishers' sites and databases for published versions. In this way published versions are acknowledged and are easily accessible to subscribers when required.

System features

The design of the repository system is key to ensuring continued academic support. The system should be user friendly and be not unnecessarily complex. This supports QUT's "content and outcome focused approach" rather than a "system basis approach". It is all too easy to overinvest staff time and project budgets into developing the ideal system when in fact academic engagement and fulltext deposit is probably the most important and difficult goal to achieve.

QUT chose the GNU ePrints repository system produced by Southampton University and available on open source from 2003. In hindsight it was a good choice, and although the system is relatively simple in design compared to some commercially available repository products, this has proven to be

an advantage over time, as it provides some highly beneficial functionality. Key features of ePrints that are valued by QUT include:

- Open source and supported by a Southampton and a user community
- Regularly updated
- Supports a self-deposit workflow
- Supports customisable metadata
- Can provide both dark and open deposit
- Indexes and produces web pages in advance to improve system performance
- Provides the "request copy" button so an author can release an item to a requester if the item cannot be made available on OA
- Interfaces nicely to web services to allow for integration with other systems

Many of these features help make the QUT ePrints system easy for academics to use.

System integration

The integration of QUT ePrints with other University systems has developed into a key attribute for continued success. By using ePrints as the single record entry and deposit point, and integrating ePrints with other systems, academics and the university benefit from a deposit once – use many times approach. It allows academics and faculty research support staff to concentrate their efforts on depositing as much content into one system (to be reused in other systems) rather than spreading deposit effort more thinly across a number of systems. It also allows for a very clear message about deposit to be made which helps reduce confusion.

At QUT the ePrints repository is integrated with the University's ResearchMaster research management system which stores and manages a much wider range of research activity information. ResearchMaster is connected to the Research Achievements Database (built on Oracle systems) which provide an interface for researchers to manage their collections of research management information. This system is also used by the University to prepare and manage systems for the research assessment exercises. Another system which integrates is the Academic Profiles system which promotes academic expertise and again links to QUT ePrints.

Records and deposits put into ePrints are sent electronically from ePrints to ResearchMaster on a nightly basis once new records are processed and made OA by library staff. This ensures a level of verification and quality control. It also ensures research outputs are made available on open access via ePrints as soon as possible and are not waiting processing for an annual research assessment exercise.

Continued system enhancements are important in order to streamline processes and promote the repository service. They can however, over time, introduce an element of confusion, and this needs to be managed. For example, when QUT integrated ePrints with ResearchMaster, the message about self-deposit because confused and the Library and Office of Research had to implement a marketing and training campaign to ensure authors understood the continues need to deposit of both author manuscript and supporting documentation for the HERDC survey. Similarly, when the Library and Office of Research started importing records from publisher databases to complete datasets for research assessment purposes, a marketing and training campaign was required to reinforce the need for continued fulltext deposit

Usage statistics

Basic usage statistics information has been available via the QUT ePrints interface for a long time, however in 2011 the Library implemented a repository statistics upgrade project. The repository statistics are available from URL: http://eprints.qut.edu.au/statistics/ on open access. The IR Stats system, also produced by Southampton is used. The aims of the repository statistics system are to provide repository deposit and usage statistics to QUT academics, repository managers and both internal and external users. Statistics available include total repository downloads over time, current key collection figures, geographic usage reports, popular authors, popular works, deposits, collection by item type, author and organisational unit statistics.

The repository statistics system has been very successful in providing incentive to QUT authors to deposit. QUT authors who already deposit can see how many downloads their papers have, and are using this as an alternative metric for impact. There is a sense of healthy competition around the most popular author and the most popular paper statistics. Academics are including deposit and usage statistics in their performance appraisals. Some Heads of School are requesting this information from academics, although there is no University HR policy which mandates this.

Heads of School, individual academics and library staff are able to use the download statistics for engaged authors to show QUT authors sho do not already deposit in fulltext, what they are missing out on, to provide incentive to deposit in future.
It has been useful for the Library and Assistant Deans Research to compare the fulltext deposit rates across faculties and institutes. This provides incentive for faculties with lower fulltext deposit rate to implement additional internal incentives.

A challenge with organisational unit statistics is the attribution of authors to faculties, schools and institutes as many authors do not provide any or correct attribution. Another challenge is the often changing academic structure of the University. The Library has chosen to retain attributes permanently over time and not update attributions to new organisational structure names. The benefit of this approach is that it reflects attribution as it was at the time of deposit, and it's a lot less work not to change it. The downside is that you cannot gain the full statistics for an organisational unit (such as the Science and Engineering Faculty) with one click, but instead need to know to look up predecessor units (such as Faculty of Science and Technology, and Faculty of Science, and Faculty of Built Environment and Engineering, and Faculty of Information Technology).
Another challenge has been how to deal with publications made available on gold open access journals and conferences. Because the fulltext is already on open access via the journal, authors may just link to the article and not upload it, confusingly resulting in a lower fulltext availability statistic. To allow for this, the Library now counts these are fulltext available even though there may or may not be a copy of the output stored in the repository.

Overall, repository statistics have shown an increase in repository deposit rate over time (e.g. 87% of the 2012 publications have fulltext attached) and also show a steady increase in fulltext downloads (up to 230,000 per month).

The advanced search option http://eprints.qut.edu.au/cgi/search/advanced/ allows for more detailed information gathering about repository collection statistics based of search results retrieved for specific search criteria.

Citation data

In 2011 the Library implemented a project to integrate citation data into the repository at the point of need – the article record level. The Library worked with Elsevier (for Scopus data), Thomson Reuters (for Web of Science data) and with Google (for Google Scholar data) to ascertain rights and system integration requirements. Scopus and Web of Science citation data is now ingested monthly at the

article level and is available on the metadata record for each research output. A link is provided to the Scopus and Web of Science databases for up to date citation information. Google Scholar citation information could not be licensed to be ingested into the repository so a link to the citation data for each output is provided.

The service has proved incredibly popular with QUT authors who use this as a convenient means of tracking citation counts as a measure of impact. Citation data is also downloaded into the University's Research Achievements Database (RAD), but on a less regular basis and really only for external assessment purposes. It adds another dimension of incentive to authors to keep on depositing fulltext and to new authors to start to deposit fulltext.

With many years of data now, QUT has many examples of authors' citation rates increasing at the same time as they start depositing fulltext into QUT ePrints. It is only a correlation, and cannot really be proved as a causal effect; however the relationship seems very evident for many QUT authors (Cochrane, 2009).

Other future system enhancements

There are always new ideas for improving the repository, a development wish-list and projects being scoped, planned and funded to implement them. Repository development can be complex, requires specific developer skills, and can be costly and labour intensive if done in project mode. QUT Library's current wish-list of repository enhancements includes – automated ingest of metadata records from external database sources, either directly from the source (e.g. from Scopus and Web of Science) or via an integration agent (such as Symplectic); integration with social media services to promote the availability of new repository content; a new look and feel; implementation of author name authority control (e.g. using ORCID or another system); and integration with the upcoming QUT Research Data Finder repository for research data.

Continued enhancements are important in order to streamline processes and promote the repository service and the need for continued marketing and training has already been discussed.

Conclusion

QUT's work on its QUT ePrints repository has continued unabated for a period of ten years. There has been significant success achieved and the Library and the institution as a whole has learned a lot of OA, repository technology, the importance of advocacy and the time it takes to implement such a service and keep it fresh in the minds of researchers. It is hoped the story told here will be useful to other academic libraries and institutions planning to implement an OA repository or planned to reinvigorate and existing repository service. The authors wish to extend an invitation to other institutions to provide information and advice.

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