Brunel University Research Archive – a year in the life of an institutional repository

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Introduction

Institutional repositories, open access, scholarly communication, research dissemination, citation factors, deposits, self-archiving, mediated deposit, downloads, post-prints, pre-prints, mandates. If I were asked to compile a list of the most overused words in my lexicon of 2007 this would be it.

Welcome then to the world of Brunel University Research Archive (BURA), Brunel University's very own institutional repository. On the latest count, according to the Registry of Open Access Repositories (ROAR) (http://roar.eprints.org/), it is one of 106 in the United Kingdom and of 954 worldwide. Created in December 2006, it archives and disseminates the full-text published research output of Brunel's research community – including journal articles, research papers and theses – to the online world, free of charge.

Rationale for an IR

Importantly, most research remains unseen as it only appears in journals to which subscribing educational institutions have access, and so is unavailable to all those potential users worldwide who would wish to have access to it. The progress in making published research open-access has developed massively in the past two years. Factors influencing this development include parliamentary recommendations and research council mandates as a condition of funding and European Union and United States Congress investigations. However, for Brunel University, the motive for setting up a repository was the desire to make PhD theses available online. In 1997, Virginia Tech University in the US set up the 'Networked Digital Library of Theses and Dissertations' for systematically archiving theses online. Their staggering download rates and popularity (by 2002/2003 they had received over 7 million hits) illuminates an often forgotten fact: PhD theses are a valuable research commodity. They are a natural product of all universities, yet universities were failing to fully harness and exploit this value, instead consigning their bound tomes to the catacombs of dusty library stacks.

Since BURA's launch in December 2006, PhD theses consistently feature in its top ten most downloaded items.[1]

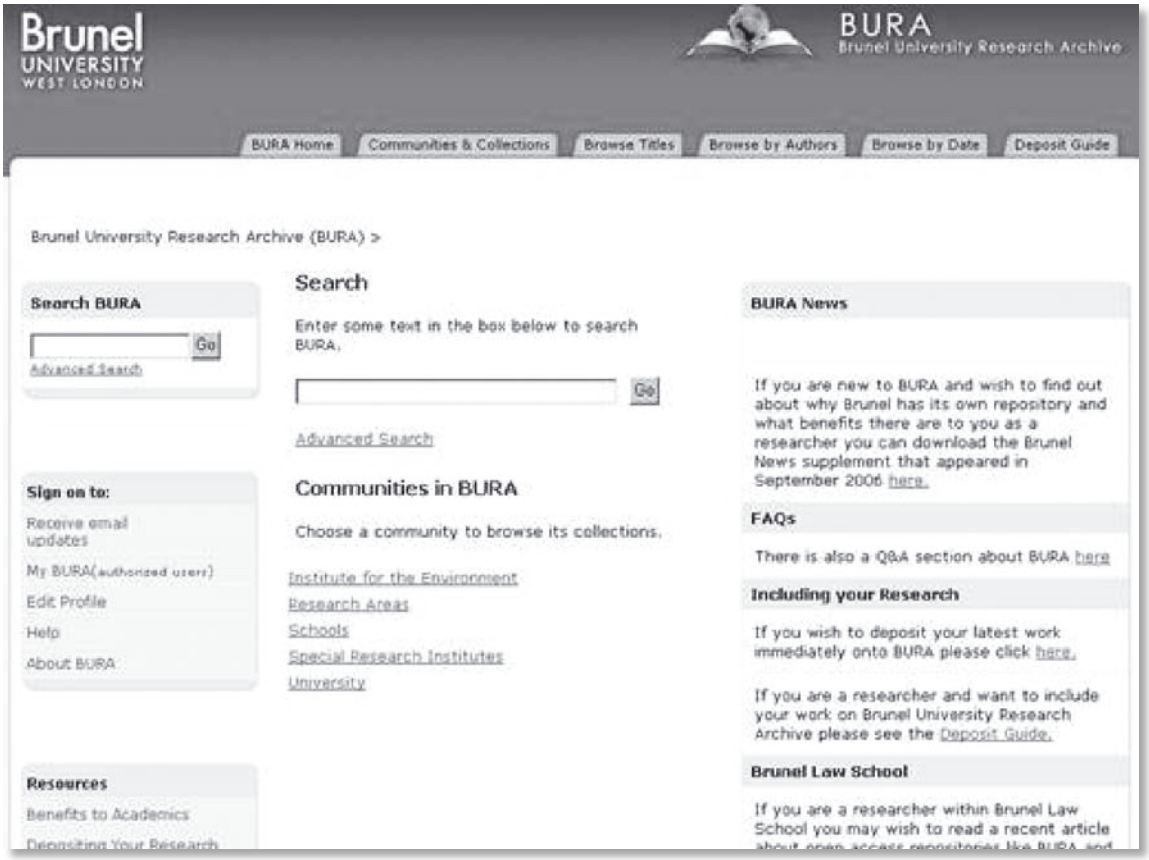
Support for BURA

The university has formally acknowledged the importance of BURA and the benefits accruing to students and researchers, as well as for the university's research profile, which helps attract and retain top researchers.

In October 2007, the Brunel University Senate endorsed a resolution that from October 2008 PhD theses would be automatically deposited onto BURA. The university hopes that this will encourage imminent graduates to deposit their theses in BURA, and thus benefit from permanent online links to their research. The advantages are clear – support to their careers by developing their individual research profiles, while allowing the university to showcase the quality of research carried out by its postgraduates.

Support within the university, for an institutional repository has always been present, particularly from the Dean of the Graduate School. There has always been an understanding of its benefits and why researchers should be encouraged to deposit their work.

A significant factor in creating this support was the increase in citations that occurred when a published journal paper was also made freely available in an open access repository. One study across



ten academic disciplines showed a minimum 25% increase in citations, rising to a 250% increase.[2]

Despite these astonishing findings, universities are still struggling to populate their newly set-up repositories.[3] Universities across the world have employed various tactics and strategies to deal with this problem, showing that simply requesting or recommending deposit is not effective. Academic surveys showed that only 15% of authors would self-archive into a repository unless it was mandated by their institution (although 49% of authors deposited at least once). Author-academics were too busy to do it, and indeed of those who had not yet self-archived any articles, 71% lacked awareness of the option.[4]

Reasons for this include academic inertia, poor time management and copyright issues.

Academic inertia and time management speak for themselves – academics either can't or won't commit the time required to self-archive. It is erroneously felt to be time-consuming when, in truth, it is very simple after initial registration and first deposit.

As for copyright, this can be an immense hurdle, as many academics fail to maintain a final draft copy of their published papers, *sans* publisher formatting, which can be deposited. Few publishers permit self-archiving of publisher copies, notable exceptions being Cambridge University Press and the Institute of Electrical and Electronics Engineers (IEEE). Happily, publishers are moving towards IR-friendly policies on self-archival, as there is a gradual realisation that, far from being a threat to their trade, in reality it is a powerful promotional tool which they can exploit to highlight their value-added final publications.

Setting up and managing BURA

With Brunel's senior management on board, the next task was to promote, engender and embed an academic culture of publishing and disseminating research online at Brunel. A launch event was held at which guests included the Vice Chancellor, the mayor of Hillingdon and a former student whose PhD thesis from 1966 was the first to be awarded by Brunel University and the first to be digitised on the archive. This was successful but a free lunch and PowerPoint presentations can only travel so far. I was determined to learn from the experience of other universities, so that I would be aware of areas where we were likely to encounter difficulties.

Securing buy-in from the key sponsors: academic authors

To allay fears over the time self-archiving would take out of academics' daily schedules (already crammed with research, teaching and administra-

tive duties), BURA undertook to deposit research articles on their behalf, gradually moving towards a model in which academics self-archived recent papers while BURA archived retrospective papers. BURA simply asked academics to submit their final draft versions in electronic format if they had it, but print formats were also accepted. Self-depositing was further promoted when a £500 prize draw was opened to those who had deposited research themselves, until we had reached 500 items on the archive.

There were complications with the request for final drafts, which were the versions permitted by most publishers. There is currently no clear and concise definition of what a post-print or a pre-print is in this field; indeed it is sometimes confused by publishers' policies themselves. Despite this, academics soon understood the concept of final drafts and were surprised by the insight they gained into what rights they actually sign away. The perceived importance of getting published in many ways obstructs the open-dissemination message as academics rashly sign away intellectual property rights under the pressure to 'publish or perish'.

I quickly learnt that despite differing tactics and strategies just requesting or recommending deposit was not working. The risk of an under-populated research archive at Brunel therefore was quite high. What did work, however, were mandates and deposit analyses comparing mandated and un-mandated self-archiving rates, showing self-archiving approaching 100% of annual institutional research output within a few years. Without a mandate, institutional repository content just hovered for years at the spontaneous 15% self-archiving rate. Professor Arthur Sale at the University of Tasmania illustrated this by comparing the growth rates of repositories at the Queensland University of Technology (compulsory; high growth) and at the University of Queensland (voluntary; low growth).[5] There was of course the risk that compulsory archiving policies might engender a negative reaction from authors. However, the only UK example of compulsory depositing was at the Department of Electronics and Computer Science (ECS) at Southampton University, and this has been highly successful. In fact a new international university ranking based on the popularity of the content of their websites on other university campuses had Southampton University 25th in the world. One of the explanations for that result has been the ECS's self-archiving mandate, established in 2001.[6]

In order to guarantee the future of BURA it was proposed that mandatory self-archiving be piloted in an academic school or subject area within Brunel University. Due to its similarity to ECS at Southampton, the School of Information Sciences, Computing and Mathematics (SISCM) agreed in principle to make it compulsory for its academics to deposit their research articles onto BURA. A policy statement was drawn up requiring all research staff to self-archive. All peer-reviewed articles must be deposited in the IR as a final draft at the time of acceptance.

However, policy agreement was the easy part and the implementation was much harder. Such a significant pronouncement needs valiant lobbying efforts not just within the school but outside as well. Support mechanisms for authors need to be in place, and a focus on the beneficial implications of the policy. In the words of a mandate manager at Queensland University of Technology, Paula Callan, 'Even with a policy in place, it is necessary to promote, prod, and provide plenty of support.'[7] The expedient approach we took was to utilise the research assessment exercise (RAE) 2008 – a process that involved the collation of the best research outputs of the university since RAE 2001. The objective was to secure academic interest in widening dissemination as well as archiving their best work using the university's online archive. It was hoped not only that this would acquire the highest-quality research items for the archive itself but that it would also sustain the self-archiving model we had adopted. Obtaining RAE research has been a modest success, with 10% of overall journal articles submitted deposited onto BURA – taking into account copyright restrictions on depositing. However, the number of users registered with the archive has been a great success.

Evaluating BURA: one year on

Self-archiving has largely been a successful model for Brunel, with over 300 self-registered depositors. Well over half of the 1000 items in the repository have been deposited by academics themselves. Informed by a desire to enhance their reputation and inspired by the ease of self-archiving (the median time for metadata entry is calculated to be 5 minutes and 37 seconds per paper[8]) some schools have surpassed expectations, by enthusiastically embracing BURA and employing it as a system of recording their research outputs – effectively becoming a database of record for them. Others have expressed interest in pilot mandates for all research output to be deposited in BURA. This is compelled by the slowly dawn-

ing realisation that open access (or rather 'open dissemination', as Dr Alma Swan describes it) is going to be a significant feature of scholarly communication in the future. The RAE is already to be replaced by a system of metrics-based assessment likely to be a combination of research income, number of research students and some form of bibliometrics. As the latter could be informed by all research outputs, citation counts and article download counts from institutional repositories could be significant.

Additionally, it is becoming evident that BURA is fostering competition between research communities within the university, in terms of making their research the most freely available and effectively showing it off, which has not been as evident before. Increasing one's citations has occasionally been a significant motivational factor for some academics to deposit.

As BURA reached its first birthday celebrations on 4 December 2007, the statistics prove that BURA has successfully taken root as a home for the university's research. The hard work now begins to establish BURA as a central platform for the university, one which is fully embedded in academic culture. The ultimate challenge is to ensure that it does not end up as an underused old technological dinosaur stuck in the 'noughties'.

Happy birthday, BURA and many happy returns!

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Resources

Brunel University Research Archive: http://bura.brunel.ac.uk

The Networked Digital Library of Theses and Dissertations (NDLTD): http://www.ndltd.org/index.en.html