

## **DORAS – INCREASING THE VISIBILITY AND IMPACT OF DCU RESEARCH**

Rachel Hill

Library, Dublin City University, Ireland  
Email: rachel.hill@dcu.ie

### **ABSTRACT**

This paper gives an overview of DORAS – an online open access repository of research papers from Dublin City University – and explores how repositories like DORAS are increasing the visibility, and potentially the impact, of research output from educational institutions. In this paper the main motivations for authors to deposit papers in DORAS are identified: increasing the accessibility of papers, increasing the visibility of papers on search engines and web portals, promotion of cutting-edge research, and the need to comply with research councils' policies on open access.

### **INTRODUCTION**

DORAS is an online collection of research papers from Dublin City University (DCU) and is available at <http://www.doras.dcu.ie>. It contains a growing number of journal articles, conference papers, books, book chapters, and theses from DCU authors. Most of these papers are open access, meaning that the full-text can be viewed online by anyone with internet access. The full-text papers are also indexed by search engines, thus making them easily searchable and retrievable using websites such as Google, Yahoo! and Google Scholar.

### **INSTITUTIONAL REPOSITORIES**

Open access collections of research such as DORAS are known as Institutional Repositories (IRs). Over the last decade institutions have been developing IRs as a means of preserving and promoting their research output across the globe. Put simply, an IR is a website containing one or more collections of full-text papers from a specified academic community. These papers are generally online and free to use by any member of the public.

Depositing papers in an IR is both beneficial to the individual authors and the institutions to which they belong. The main drivers for depositing research in an IR are to:

- Raise the profile of an author's/institution's research internationally
- Increase the visibility and accessibility of an author's/institution's research online
- Increase the impact of research
- Meet the requirements of research councils' open access policies
- Organise and preserve the papers perpetually

### **INCREASED ACCESS TO PUBLISHED RESEARCH**

One of the major advantages of DORAS, and IRs in general, is that they increase the accessibility of research publications from the institution. Having access to published papers is crucial to the process of undertaking and completing research. Each year academic libraries pay

out hefty subscription fees in order to enable academics to access journal and publisher databases online. If the institution cannot afford the subscription fees then its researchers are at a loss. This also means that when an author publishes a research article, its audience is limited to those who have paid a subscription to the publication in which the article appears. This is limiting the readership of the article, and in turn it may affect the impact of the article.

In contrast to publisher databases, DORAS can be accessed free of charge. This means that it can reach a wider audience. Over the last decade, due to the influence of the Open Access movement, many publishers have started to permit their journal articles to be made open access and deposited in IRs like DORAS. There are normally some conditions to this: many publishers will allow a peer-reviewed version of a journal article to be deposited in an IR but they will not permit the final copy-edited and formatted version to be made open access; many publishers specify that an article cannot be made open access until several months after publication; in some cases the publishers will only permit journal articles to be made open access if the author pays a one-off open access fee. SHERPA, a UK service that lists the open access policies of over 400 international publishers, states that 68% of these publishers permit their publications to be made open access in some form [1]. In most cases, the only barrier that stands between an author making his/her research open access is the time and effort required to upload the paper to the institutional repository. In the case of DORAS, DCU Library uploads the papers on behalf of the author. This means that all an author has to do is email the file(s) to the Library who will then check the paper for copyright clearance and upload the file(s) and bibliographic information associated with the paper.

## **SEARCH ENGINE VISIBILITY**

Another key benefit to depositing research in an IR is that it increases the visibility of the research online. For the first half of 2008 68% of traffic to the DORAS website came via search engines. DORAS is structured in a web-friendly manner that makes it easy for search engine robots to crawl and index the web pages and full-text files. It is no surprise that Google is the predominant search engine used to access the DORAS website. Approximately two thirds of users accessing DORAS through search engines use the Google search engine.

In order to illustrate the high visibility of DORAS papers on Google, a random sample of 50 papers from DORAS was selected. The title of each paper was inputted in the [www.google.com](http://www.google.com) [2] search engine and the search results were analysed to investigate:

- DORAS' ranking on the search results page
- DORAS' ranking compared to the official publisher/conference website for the paper
- The highest ranked result that linked to an open access full-text version of the paper

It was found that in 52% (26) of the searches carried out, DORAS ranked first on the search results page (Figure 1). In fact, DORAS only ranked below the top ten in 2 of the title searches.

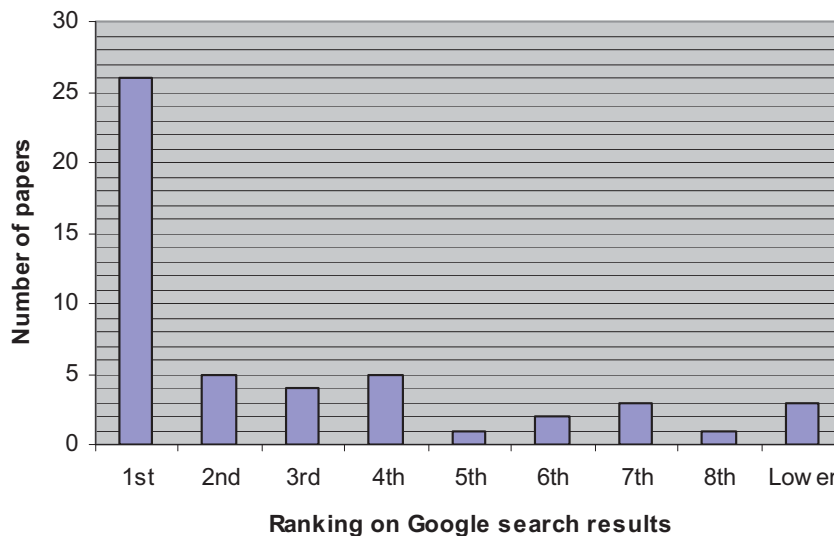


Figure 1: Ranking of DORAS papers on Google search results page.

Figure 2 shows an example of one of the searches carried out in Google. The journal article title, *Demonstration of wavelength packet switched radio-over-fiber system*, was inputted in the search engine. In this search, DORAS was the top hit on the search results page. Significantly, DORAS ranked higher than the journal publisher’s website.

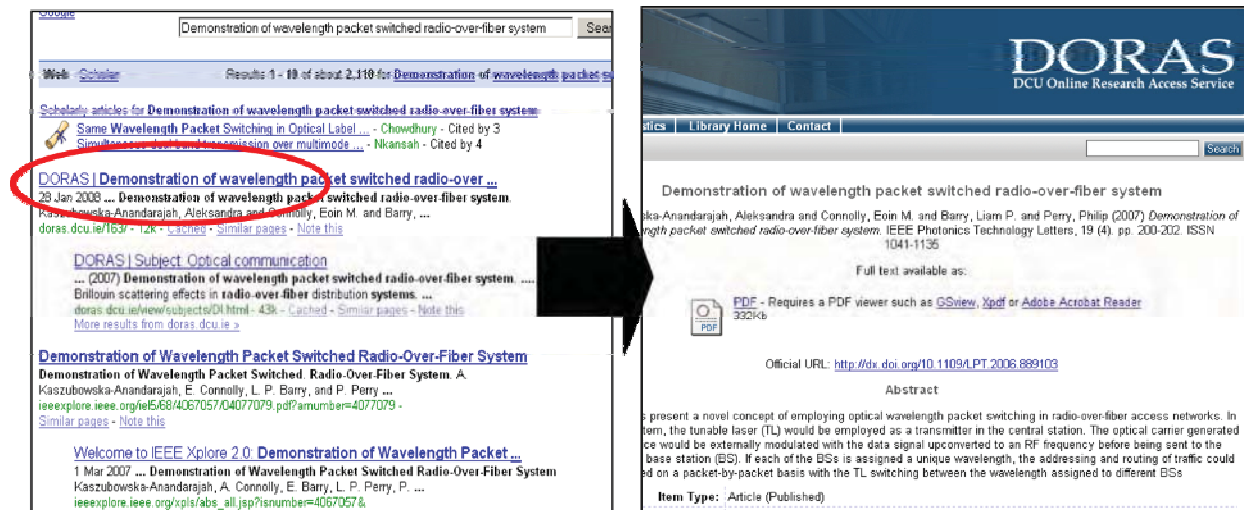


Figure 2: Google search for the title of a journal article that is available in DORAS (at <http://doras.dcu.ie/163/>)

Overall, in 28 (56%) of the searches, the DORAS version of the paper ranked higher on the search results page than the official publisher/conference website for the paper. Moreover, in 39 (78%) of the searches, DORAS was the highest ranked link to an open access version of the paper. While these results are anecdotal, given that Google is constantly evolving, they give a snapshot of the high visibility of DORAS papers on Google. Although it is more difficult to

quantify, similar patterns can be seen when using Google to search for particular subjects or authors that are found in DORAS.

## **PROMOTING CUTTING-EDGE RESEARCH**

Institutional repositories provide the means for researchers to increase access to valuable research papers that are not published in journals or books. These papers - including theses, conference proceedings, workshop papers, working papers and reports – often contain breaking research and prime intellectual content. By depositing them in an IR, authors are not only increasing the visibility of their research but they are also broadening the potential for inter-institutional collaboration.

### **Theses**

In DCU a one year e-theses pilot with the Schools of Biotechnology and Electronic Engineering was completed in the academic year 2007/2008. Postgraduates submitting research masters or PhD theses were required to deposit an electronic version of their theses in DORAS. Overall this pilot was successful and from Autumn 2008 all research theses submitted for award in DCU will also be uploaded to DORAS. The advantages of making theses open access online are apparent – traditionally theses have been highly inaccessible, in a lot of cases gathering dust in library basements and academics' offices. Since the dawning of the Web it has been possible for postgraduates to make their finished theses available online on personal websites, departmental websites, etc. But without the structures and processes formalised there is no guarantee that the thesis will remain available permanently, or that the files online are the definitive version of the thesis.

In advocating the use of DORAS for exposing theses and other unpublished papers, DCU has made an organisational commitment to promoting the entire research output from the university as well as preserving this material so that future students and academics can build on the research already completed in the university.

## **NATIONAL AND EUROPEAN INITIATIVES THAT ARE BROADENING ACCESS TO DCU RESEARCH**

Underpinning the structure of an IR is a protocol that allows the bibliographic metadata describing papers in an IR to be harvested from the IR and used in external value-added services. In the case of DORAS, there are three particular external services that are increasing the visibility and accessibility of DORAS papers online, namely, IReL-Open, DART-Europe and DRIVER.

### ***IReL-Open***

IReL-Open is an Irish institutional repository initiative run by the Irish Universities Association (IUA) Librarians' group with Higher Education Authority (HEA) funding [3]. The aim of this three year project is to establish IRs in all Irish universities and to create a national portal that will harvest papers from each IR, including DORAS. This portal will enable users to browse and cross-search all the open access research in Irish IRs from the one location. The national portal will be operational by the end of 2010. Once complete, it has the potential to raise the profile and impact of Irish research internationally.

***DART-Europe***

DART-Europe is a European organisation made up of approximately 120 institutions, including DCU. DART-Europe has created a portal that harvests doctoral theses from the IRs in these institutions. The portal is available at <http://www.dart-europe.eu>. Approximately 100,000 doctoral theses are currently being harvested into the portal, including theses from DORAS. This rapidly growing portal is not only raising the profile of DCU research in Europe but it is also an invaluable resource that can be used by PhD students and researchers.

***DRIVER***

DRIVER is another European initiative that is harvesting papers from DORAS. DRIVER is an FP7 funded project with a main objective to “build a virtual, European scale network of existing institutional repositories using technology that will manage the physically distributed repositories as one large scale virtual content source” [4]. The DRIVER project has created a test bed portal containing over 600,000 open access papers from 110 repositories across Europe. This portal can be accessed from <http://driver-community.eu/> Users can search and browse DORAS papers from the DRIVER portal. In this way it is acting as another route through which people can access DCU research.

**RESEARCH COUNCILS’ OPEN ACCESS POLICIES**

Much of the research carried out in an academic institution is funded by research councils and funding bodies. Given the benefits of open access it is no surprise that a growing number of research councils are requiring that their funded research is made public online. The most common methods for complying with these policies are either to deposit the research papers in an institutional repository or in a subject repository. In Ireland a number of research councils have developed, or are in the process of developing, a policy on open access. IRCSET, the Irish Research Council for Science, Engineering and Technology, recently announced an open access policy which took effect from 1<sup>st</sup> May 2008 [5]. The conditions of the policy can be seen in Table 1.

Conditions to which IRCSET funded Award Recipients should adhere:

1. All researchers must lodge their publications resulting in whole or in part from IRCSET-funded research in an open access repository as soon as is practical, but within six calendar months at the latest.
2. The repository should ideally be a local institutional repository to which the appropriate rights must be granted to replicate to other repositories.
3. Authors should deposit post-prints (or publisher’s version if permitted) plus metadata of articles accepted for publication in peer-reviewed journals and international proceedings;
4. Deposit should be made upon acceptance by the journal/conference. Repositories should release the metadata immediately, with access restrictions to full text article to be applied as required. Open access should be available as soon as practicable after the author-requested embargo, or six month, whichever comes first;
5. Suitable repositories should make provision for long-term preservation of, and free public access to, published research findings.
6. IRCSET may augment or amend the above requirements wherever necessary to ensure best practice in Open Access.

Table 1: Excerpt from the IRCSET statement of policy relating to the open access repository of published research papers [5].

The IRCSET policy is very similar to draft policies recently drawn up by Science Foundation Ireland (SFI) and the Higher Education Authority (HEA). It is anticipated that these policies will take effect soon. A list of research council policies on open access can be viewed at <http://www.sherpa.ac.uk/juliet/>

## CONCLUSIONS

This paper has highlighted the benefits of open access repositories like DORAS. The main advantages for authors and institutions is that their research is more accessible and visible online. This in turn leads to an increased “web presence” for the research papers, the authors who write them, and the institutions to which they belong. Much research is now being conducted into the impact of open access on citations [6]. While this may vary from discipline to discipline there is a general indication that open access papers are more highly cited than papers that are only available by subscription. The high visibility of DORAS on Google, as mentioned above, gives weight to the argument that open access has a positive effect on impact.

While still at the early stages, it can be envisaged that repositories like DORAS will grow in value as more researchers deposit papers in them – for their own benefit, as well as a means to complying with research funders’ open access policies.

## REFERENCES

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