

Communicating the results of scholarly research — what it really costs

What it costs is a considerable amount of money. The global cost each year of publishing, distributing and accessing journal articles is estimated at £25bn, according to a report newly-released by the RIN. This sum constitutes some 14% of the overall costs of undertaking, communicating and reading the results of the research reported in journal articles. Within these figures, £1.9bn is accounted for by the unpaid non-cash cost of peer review, some £2.1bn in access provision at libraries and £16.4 billion in user time in searching and accessing. The estimated global incurred cash cost for publishing and distribution is £4.5 billion of this total.

The report was commissioned by the RIN with the support of the Publishing Research Consortium (PRC), the Society of College, National and University Libraries (SCONUL) and Research Libraries UK (RLUK – formerly CURL).

Its findings are part of a detailed economic analysis produced by Cambridge Economic Policy Associates (CEPA). The report provides for the first time an overall picture of the costs of the scholarly communications system as a whole, from the production of research outputs to the reading of those outputs, focusing on the publication, distribution, and provision of access to articles in English-language scholarly journals. It also shows the sources, nature and scale of the funding and other resources made available to meet those costs; and it models the impact of possible changes. It thus provides a base of evidence to underpin the development of policy for research funders and publishers alike.

The report also shows the scale of the UK contribution to the scholarly communications system:



- UK researchers constitute 3.3% of the global research base, and produce 6.6% of the global supply of journal articles.
- On average, 7.1% of all published articles are peer-reviewed in the UK. The UK is thus a net contributor to the global provision of peer review, a contribution estimated to be worth £165m a year in non-cash costs, which is 8.7% of the global costs of peer review.
- The total UK contribution to all stages of the scholarly communications process amounts to £408m. Its contribution to meeting global costs is less than the proportion of articles it produces, but significantly greater than its proportion of all the researchers in the global research base.

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Freedom of Information meets academic research: an exploratory workshop

9 September 2008, London

The UK Freedom of Information (FoI) Act came fully into force in 2005. The Act imposes significant duties and responsibilities on public authorities to give access to information. Together with the Data Protection Act and the Environmental Information Regulations, FoI is a significant part of the wider government agenda to increase openness, transparency, trust and accountability in the public sector.

In 2006, the Constitutional Affairs Select Committee concluded that 'the FoI Act has already brought about the release of significant new information and that this information is being used in a constructive and positive way by a range of different individuals and organisations.' However, so far, these do not prominently include academic researchers, who seem have made little use of the provisions of the FoI Act as a resource discovery mechanism.

For example, the FoI Act has effectively abolished the old '30 year rule' under which public records were considered for release into the public domain when they were 30 years old. Now it is possible for researchers to ask The National Archives to consider a request for access to public records regardless of their age. In addition, since FoI applies to over 100,000 public authorities, local and national, most of which were not previously subject to public records or other access to records legislation, researchers potentially have much greater access to records and information created and held by public authorities than ever before.

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Peer review in the 21st century

Interesting evidence has begun to emerge over the past few months as to the workings of the peer review system. The Publishing Research Consortium has published the results of a survey it commissioned on the attitudes and behaviours of researchers across the sciences and the humanities in relation to peer review. Not surprisingly, the report *Peer Review in Scholarly Journals* shows strong support for peer review. But two key issues emerge from the report and subsequent debates.

The first relates to researchers' practice as reviewers. Those who responded to the survey review an average of eight papers in the previous twelve months, though the most active reviewers completed an average of fourteen reviews a year, and are responsible for nearly four-fifths of all reviews. They see this as an altruistic service to the academic community, and there is no great desire for payment of reviewers; but they do feel that they are overloaded, not least because the average review takes about 5 hours to complete. Overload is presumably one of the main reasons why about a fifth of all invitations to review papers are turned down. It may also be a factor behind the mixed views on reviewing the data that underlies journal articles: support for doing so in principle is accompanied by a view from nearly half of respondents that any expectation that data will be fully reviewed is unrealistic.

The second issue relates to the desirability of double-blind review (the system under which neither author nor reviewer identities are revealed) as distinct from single blind review (where author identities are revealed). Double-blind review is predominant in the humanities and social sciences, but much less common in the physical and life sciences. An editorial in *Nature* in February pointed to a number of advantages of revealing the identities of authors, particularly in cultures which promote the open sharing of information; and the absence of evidence of any significant differences in the quality of reviews under the two systems. But it also acknowledged some evidence that double-blind review reduces bias against women. The evidence cited, from the journal *Behavioural Ecology*, has recently been challenged. But this is clearly an issue that requires further study.

www.publishingresearch.net/PeerReview.htm

Research Excellence Framework and the power of information

The Research Excellence Framework will undoubtedly have an important influence on the shape of the research information landscape in the UK and for that reason the RIN has a clear interest in how it develops.

However, this interest is not with research assessment in itself, but rather with its possible impact on how research information services develop, and how researchers make use of them. Like any system of assessment, the REF will change researchers' behaviour in significant and unpredictable ways, with potentially damaging consequences for the performance of the UK research base.

For this reason, the RIN's response to the consultation on the REF proposals highlighted the need for research assessment to reflect the changes in the nature of scholarly communications that are now in train and which will develop rapidly in the future. We recognise that the traditional journal article remains very strong in many disciplines. But the growth of both subject-based and institutional repositories, the circulation and citation of pre-prints and working papers, the use of social networking sites and services, text-mining, and the sharing and citation of data and other outputs that are not formally published, are all having an increasing impact both in the UK and, most importantly, internationally. It is critically important that research assessment should not stifle such trends, nor discourage UK researchers from developing and using innovative means of communicating their research.

The RIN is well-placed to provide an evidence base that will help the Higher Education Funding Bodies ensure that whatever the REF's final form, it takes account of practical developments in scholarly communications, and changes in researcher behaviour as they occur. We are thus looking to initiate a programme of research which can inform and support the development of the new research assessment framework. This is likely to be articulated around two broad themes:

- an investigation of publications in forms other than those covered by the bibliometric indicators suggested in the REF proposals;
- the effects of research assessment (both REF and the Research Assessment Exercise) on publication patterns.

It is anticipated that this work will be carried out during late 2008 and during 2009.

www.rin.ac.uk/ref-consultation
www.hefce.ac.uk/research/assessment/reform

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- UK libraries spend £163m on journal subscriptions, and a further £72m on the provision of access facilities, making a total of £235m. Academic libraries account for £173m (74%) of that expenditure.

In modelling the impact of four possible changes to the scholarly communications system, the study shows that:

- A move to electronic-only publishing could bring a fall of approximately £1bn (12%) in the global costs of publishing, distribution and access. By far the largest part of that reduction would result from a fall of £758m in libraries' costs in providing access to journal articles.
- A move towards author-pays open access publishing, where publishing costs are met by publication fees, rather than subscriptions for access to journals, could bring global savings of £556m, on top of the savings arising from a move to electronic-only publishing. But the costs and benefits would be distributed

unequally across research institutions, depending on the volume of articles produced by their researchers; and the financial benefits to UK libraries would be more than offset by an increase in the national share of funding to meet the costs of publication. The savings here would be less if the cost of administering author-side payments are higher than modelled in the study

- The introduction of cash payments to meet the costs of peer review would imply a transfer of £1.9bn to researchers and perhaps to the institutions that employ them. But it would also bring increases in the costs of subscriptions to journals, estimated at 43% for major discipline journals.
- Continued increases in research funding over the next ten years, with related increases in the number of journals and journal articles, would bring a rise of 11% by 2018 in the number of journals, and of 28% in the number of articles. As a result, we estimate that global publication and distribution costs would rise by 26% in real terms.

www.rin.ac.uk/costs-funding-flows

Sharing and publishing data

There are two essential reasons for making research data publicly-available: first, to make them part of the scholarly record that can be validated and tested; second, so that they can be re-used by others in new research.

The RIN has recently published a report on why and how researchers make their research data available to others and the issues they encounter when doing so; this is based on a study of researchers' attitudes and practices in a wide range of disciplines and subject areas. The amount of digital data being created and gathered by researchers is increasing rapidly; and there is a growing recognition by researchers, their employers and their funders of the potential value in making new data available for sharing, and in curating them for re-use in the long term.

The last two years have seen the development of policies on research data by funders both in the UK and internationally. But the study finds that there is often a mismatch between those policies and the norms and practices of researchers in a number of disciplines. Many datasets of potential value – particularly those arising from small-scale projects – are not managed effectively or made readily-accessible and re-usable. Many are stored by researchers themselves in a more or less haphazard manner on DVD or hard disk with little chance of effective retrieval; and those on websites are vulnerable in the long term especially if the website depends on project funding.

Researchers produce many kinds and categories of data, which may undergo various stages of transformation in the course of the research process. The convention in many fields

is that derived or reduced data are what is made available to other researchers. Providing access to raw data, however, may be the most effective means of ensuring that the research is reproducible. But it is relatively rare, and there is discussion in some fields about the lack of access to raw as distinct from derived data.

Some researchers are motivated to publish their data by factors such as altruism, encouragement from peers, or hope of opening up opportunities for collaboration. But the perceived failure of the Research Assessment Exercise (RAE) explicitly to recognise and reward the creating and sharing of datasets – as distinct from the publication of papers – is a major disincentive. Moreover, many researchers wish to retain exclusive use of the data they have created until they have extracted all the publication value they can. When combined with the perceived lack of career rewards for data creation and sharing, this constitutes a major constraint on the publishing of data. Other disincentives include lack of time and resources; lack of experience and expertise in data management and in matters such as the provision of good metadata; legal and ethical constraints; lack of an appropriate archive service; and fear of exploitation or inappropriate use of the data.

The report makes a number of recommendations for tackling these issues, and we shall be pursuing these with researchers, funders and other key stakeholders over the next few months.

www.rin.ac.uk/data-publication

Copyright and Intellectual Property Rights



The copyright and IPR regime plays a critical role in facilitating or constraining speedy and effective information flows between researchers and between them and others who are interested in the results of research. The Gowers Review in 2006 recommended a number of changes to the current regime, to achieve a better balance between providing incentives to innovate on the one hand, and ensuring that the welfare losses associated with restrictions on access are minimised on the other.

The Government consulted earlier this year on proposals to change the 'exceptions' to copyright, in the light of the Gowers recommendations. These exceptions and limitations to copyright provide a framework of permitted activities – particularly those related to 'research and private study' – that are of critical importance to researchers as well as to libraries. The research exception allows researchers, and libraries acting to support their work, to copy material for the purposes of their research. The purpose of the exception – which is restricted to 'research for a non-commercial purpose' – is to allow researchers to pursue their work effectively, to the ultimate benefit of society. But it covers only literary, dramatic, artistic and musical works, and the Government is now considering whether it should be extended to sound recordings, film and broadcasts. That, along with proposals to make it easier for libraries and other bodies to copy digital material for the purposes of preservation, would be most welcome.

What is much less satisfactory is the failure to tackle key underlying issues such as the way in which access to a great deal of digital content is now governed by contracts which may restrict the rights allowed to users under copyright law; the restrictions on what users are in practice allowed to do when confronted with 'technological protection measures' in the name of digital rights management; and the difficulties in dealing with 'orphan works' (where the copyright term has not expired, but the rights-holder cannot easily be identified).

Some of the difficulties and complexities in dealing with copyright are set out in Joint Guidelines on Copyright and Academic Research published recently by the British Academy and the Publishers Association. The Government's consultation paper on changes to copyright exceptions, and the RIN's response to it, can be found at the address below.

www.rin.ac.uk/copyright-exceptions



■ Coalition for Research in Library, Archive and Information Science

One of the RIN's key roles is to undertake research into the behaviours and needs of researchers as they seek to discover, create, manage and disseminate information resources relevant to their research. As such, it has become one of a range of bodies in the UK that are involved in supporting and undertaking research in library, archive and information science (LAIS). But there is a widespread view that much of the research in these areas is piecemeal, of varying quality, with little co-ordination or coherence, and that it is poorly disseminated.

The RIN is therefore joining a number of other bodies including the British Library, the Chartered Institute of Library and Information Professionals (CILIP), JISC, and the Museums, Libraries and Archives Commission (MLA) to establish a Research Coalition for Library, Archive and Information Science. The Coalition's aim will be to bring together information about research opportunities and results; encourage dialogue between research funders; promote the translation of research into practice; articulate a strategic approach to Library, Archive and Information Science (LAIS); and promote the development of research capacity. We hope that the Coalition will be established formally in the next few months, and that it will provide a formal structure to facilitate access to LAIS research results and maximise their relevance and impact.

■ Life after the AHDS

On 31 March, funding ceased for both the Arts and Humanities Data Service (AHDS) and the Arts and Humanities Research Council's (AHRC) ICT Methods Network. Members of both the research and the library and information communities have expressed some misgivings about the implications of the demise of these two bodies, which means that the UK arts and humanities community will need to seek alternative ways of providing a research infrastructure to support the use and application of ICT methods and the management of and access to digital research content.

A conference was held at King's College London on 31 March to review and celebrate the achievements of the AHDS and the Methods Network, and to reflect on the impact their work has made on the creation, use, and preservation of digital resources, and on the practice and processes of research in the arts and humanities. It was followed the next day by a seminar at which representatives of a wide range of organisations considered ways in which, in the new environment, an effective e-infrastructure to support arts and humanities research might be developed.

It is still unclear quite how much of the AHDS and its services will remain in being, and in what form. The central AHDS Executive is now incorporated in a new Centre for E-Research at King's College London; and the host institutions of the subject-based centres have stated that they are 'committed to working separately and together to retain the expertise and skills of the staff of the AHDS, and to provide a revised set of services for the arts and humanities research community'. JISC has provided funding for a further year to keep the website running, and to enable the centres to continue to deliver AHDS collections. How the services will be provided beyond that remains to be seen.

RIN: in brief

■ Use of E-Journals

The last decade has brought unprecedented levels of access to e-journals for academic researchers. The assumption made by librarians, publishers and academics alike is that enhanced access is beneficial; but nobody has sought to establish whether, for instance, it has led to improvements in the research process and outcomes, and whether this varies for types of institution and user.

The RIN has commissioned the CIBER team at UCL to study the use of journal articles by academic researchers in the UK across a representative sample of subject domains and universities, and the most relevant e-journal platforms. The study will be completed by the end of 2008.

www.rin.ac.uk/use-ejournals

■ Disciplinary case studies

The RIN is looking to initiate the first round in its programme of case studies about how researchers in a selection of subjects and disciplines use, manage and create information of different kinds as part of their research methodologies. The aim is to gain an in-depth understanding about how researchers work in practice in different contexts and settings, with different kinds of information sources. To achieve this, the studies will make extensive use of observational techniques.

■ Bibliographic data flows

Bibliographic and related records for resources in UK research libraries provide the basic material for the major discovery services used by researchers and others. The flows of bibliographic data between the key players, as they are created, used and reused, are complex. The relationships between the services provided by these groups are equally multi-layered.

The RIN is commissioning a project to investigate and clarify this situation and to provide suggestions for ways forward which will simplify the process of creation and use of bibliographic data to the benefit of all concerned.

■ Data Management Forum

The RIN has partnered with the Digital Curation Centre to set up a Research Data Management Forum. Its aim is to promote the exchange of experience and best practice between the managers and technical staff from UK data centres, university repository installations and other related organisations with responsibility for the discovery, delivery and preservation of digital research output. The Forum held its inaugural meeting in Manchester on 19 – 20 March.

www.rin.ac.uk/data-forum

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In this context, the RIN is organizing a workshop, to take place in London on 9 September, to raise awareness of FoI as a resource discovery tool for the research community; to help researchers become 'informed consumers' under the new access regime; and to look at instances where use of the FoI Act has been beneficial to researchers. Speakers at the event, to be chaired by Maurice Frankel of the Freedom of Information Campaign, will include Duncan Tanner (Bangor University), Steve Wood (Information Commissioner's Office) and Teresa Barstow (The National Archives). Registration is open on the RIN website at the address below, where the programme is also available.

www.rin.ac.uk/foi-workshop