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Current research information systems, open access repositories and libraries

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Abstract

Purpose – The purpose of this paper is to give an overview of larger developments in the international research information environment, and to outline their impact on the open access movement within libraries.

Design/methodology/approach – A narrative account of recent historical developments such as national current research information systems (CRIS), and their local campus equivalents, together with an analysis of the relationship of these systems with national research policies, and particularly their relationship with research evaluation policy.

Findings – Developments in the research landscape have important effects on grass-roots LIS practice, and have given a great boost to open access repositories while preserving the traditional role of commercial journal publications. This complementary relationship was completely unexpected at the outset of the open access movement, which was specifically intended to reduce the importance of commercial journal publications.

Research limitations/implications – This is an exploration of the relationship between open access and current research information environments. This relationship is of enormous significance and will need to be analysed and better understood in future. The analysis in this paper is thus an initial attempt to increase this understanding, and further, extended investigation is recommended.

Practical implications – Practitioner librarians must come to grips with the role of repositories within the CRIS environment, as well as the relationship of repositories to the local campus research information system.

Originality/value – This paper investigates trends in the broader research information environment which will be unfamiliar to many LIS practitioners, and puts them in the context of everyday professional practice.

Keywords Research, Communication, Digital libraries, Serials

Paper type General review

Introduction

Recent interest in open access research repositories in UK universities has led British libraries to consider their position in the local and national research information network. Research publications are, after all, the end result of a larger campus research effort, which in turn derives from national research activity. And increasingly, the structure of this research process is being analysed by university managers and government, with a view to making local structures a more coherent part of the overall national framework. Ultimately the hope is that universities will be able to manage their research activity more effectively as a result of a new, more considered, national approach.

So, this is a chance for library-run repositories to play a more effective role in the total research process. But what should libraries aim to achieve as they consider their place in the larger scheme of things?

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Current research information systems (CRIS)

Any attempt to manage "the total research process" is by definition a fairly ambitious undertaking. One essential part of this ambition is to see the overall information flow of the research process in a single and coherent form.

This means creating an information system that can manage all relevant research information, starting with funding opportunities, going through to the writing and submission of proposals stage, continuing with successful bids which then become active projects to be managed to completion – at which stage they generate outcomes, many of which are either publications or some other artefact of finished research activity. Such a system is often described by the term "current research information system" or CRIS[1], though concepts such as "virtual research environments"[2] and "research management systems" also invoke the idea of managed research information and are to some extent synonymous with or include the concept of a CRIS.

Managing the entire research process as a series of "information events" is an idea with a surprisingly long pedigree. The European Union has long had a highly managerial approach to the funding of its research effort and its Community Research and Development Information Service for Science, Research and Development (CORDIS) has nurtured ideas that facilitated the emergence of the CRIS movement[3].

The EU view of the CRIS as a Union-wide system is obviously the highest level of implementation possible, and has borne fruit in the creation of euroCRIS, the professional association of CRIS experts "dedicated to the improvement of research information availability". This group has evolved CERIF (the Common European Research Information Format), the EC-recommended data standard which the CRIS community provides in order to act as the glue that holds such information systems together, facilitating interoperability[4]. There is an associated biannual series of CRIS conferences, which has produced some interesting publications (the 2006 conference was described by Sergeant and Hey, 2006).

Admittedly, many initiatives associated with the EU appear high-minded and abstract to the point of being ungraspable. To the cynic, a grim vision of bureaucratic (or "eurocratic") over-management of R and D looms into view, with significant amounts of EU tax-payers' money being poured into community-wide schemes that yield fine words but little else. As more than one university researcher has said in the past, the only thing worse than applying and failing for EU research grant funding is applying and succeeding – such is the mountain of bureaucracy that weights down upon the researcher.

However, the idea of a CRIS has been successfully implemented elsewhere, for example in the USA for government funding of agricultural research[5]. If a joined up national approach to managing research information can flourish in the most laissez-faire and "non-statist" economy in the world, then the idea is demonstrably more than the imagining of state bureaucrats intent on over-centralising publicly funded R and D.

Similarly, the Dutch research system, which has contributed so much to thinking about national research evaluation and management by means of bibliometrics, has used the idea of a "one-stop shop" for national research information to build the National Academic Research and Collaborations Information System (NARCIS) portal[6]. NARCIS was developed by the Royal Netherlands Academy of Arts and Sciences (KNAW) and the Netherlands Organisation for Scientific Research (NWO), with assistance from SURF (a sort of Dutch JISC), to increase the visibility and retrievability of Dutch scientific research. Most interestingly for librarians, as of the 2 June 2008, the NARCIS science portal has incorporated within itself the entire

integrated network of Digital Academic Repositories in the Netherlands, DARENET, forming an all-encompassing entity.

So, the fact that a national CRIS has incorporated the national open access repository network, as in the Netherlands, makes the relevance of the CRIS concept to libraries and their repositories absolutely clear. If the goal of euroCRIS is to use such systems to promote "easy access to information ... to allow easily-assimilated presentation of research results in appropriate contexts"[1], then the CRIS may even turn out to be the enabling framework of the open access repository movement – no more, no less.

National decisions, local consequences

Turning back to British higher education, we can see that research management and information systems in the UK are at something of a turning point. In terms of funding systems, the UK is poised between continental Europe and the USA.

On the continent we see national research systems where research funds are distributed on a twin track basis, via submission of proposals for specific research funds, and via regular national research evaluation exercises which distribute funds according to institutional and departmental quality. Librarian-friendly tools such as bibliometrics can be used in these evaluation exercises. But in the USA, such (biblio)metrics-based approaches have been rejected as potentially distorting to the pattern of research funding.

The UK has abandoned the evaluation methods of its previous twin track approach based on both Research Council Funding and the Research Assessment Exercise, though not the twin track approach itself. In creating a Research Evaluation Framework out of the defunct RAE, it has looked to continental models of metrics-based evaluation for ideas on how to manage the research evaluation part of its funding process.

But this has proved highly contentious. Indeed so hostile was the reaction of the Research Councils UK (RCUK) to the government's initial outline of a metrics-based evaluation-system that there were fears that the department-focussed strand of the funding system might be abandoned, all funds being disbursed via the RCUK route[7].

From the practitioner librarian's point of view, it is to be hoped that a more coherent, national system of research funding is to be developed, with CRIS-like qualities, regardless of the role that LIS tools such as bibliometrics play within that system. For us, the merit of CRIS-type funding systems is that their emphasis on extracting maximum benefit from publicly funded research and then promulgating its findings as widely as possible leads to the promotion and integration of local open access repositories into the national research landscape. If the UK turns its back on such managed national approaches, or botches its implementation of them, then this will be a terrible lost opportunity both for publicly funded research in general, and the open access movement in particular.

Local repository architectures

While these big decisions are being discussed at national level, open access repository librarians working at local institutional level can shadow these larger patterns of integration by examining the place of their own repositories within the local "campus research information system".

Most universities manage research by means of an institutional research office led by a Dean of Research (terminology may vary), which keeps an overview of funding

and grant opportunities and manages the progress of successful research bids while maintaining databases of research expertise and quite possibly research publications. Librarians need to ask, what is the relationship of open access repositories to those databases of research publications?

The role of research office publications lists came to the fore during the preparations for the last RAE, when the task of collecting and managing lists of an institution's best research publications became of paramount importance. As a result of this, collecting mechanisms were refined, resulting in research publications databases of high quality and the inculcation of the habit amongst academics of depositing research metadata into some sort of central database. The opportunity for librarians is to integrate their repositories into the post-RAE research information system, building on the achievements to date.

Crucial questions which then arise are: should open access repositories absorb and supersede research publications databases? Conversely, should research publications databases be expanded to eclipse and supplant open access repositories? Or, lastly, should the two systems evolve to fulfil different but complementary roles within the overall campus research information system?

The highly specialised nature of research publications lists makes them ill-suited to take over the role of open access repositories, but institutions such as Glasgow University[8], Southampton University[9] and Kingston University[10] are happily using their single open access repository as a research publications system for research evaluation with complete success. Alternatively, St Andrew's[11] is maintaining its separate research publications system, but using its open access repository as a gateway to that system, ensuring that any submissions are routed back into the open access repository after deposit.

The merit of maintaining a dual approach to research publications and open access is that your options are kept open: if the evolving Research Evaluation Framework that supersedes the RAE involves the speedy development of a highly tailored local database with elaborate task-specific functionality, then a separate "dark" database under local control can be programmed for specialised REF purposes. In practice it is quite hard to repurpose a generic piece of publicly accessible open access repository shareware for very narrow research evaluation requirements. It is possible – if you have generous amounts of technical know-how at your disposal – but it is not a small undertaking.

In the dual approach, it is essential to share data between the two local systems, to avoid exasperating researchers by asking them to deposit in two places at the same time, and to avoid the workload of checking and editing identical self-archived submissions on two systems.

Either research is self-archived onto a research publications system and then pushed to the open access repository, or open access deposits are pushed to the research publications database. As long as duplication of effort is avoided, the direction of flow is irrelevant. But it is essential to have a single point of upload into a master repository where editing and quality control takes place, before reliable records are fed out to other parts of the campus research information system.

Conclusions

The development of open access repositories in recent years has been remarkable. However, repository librarians must acknowledge that the context in which this growth has occurred demands that they re-think the rationale underlying open access.

The original clarion call that announced the birth of open access was very much connected with the crisis in serials pricing. Repositories were seen as a way of offering public access to research without handing valuable academic intellectual property to the private sector who would sell it back to the research community at a significant mark up.

However, in many ways the increasing importance of research evaluation has had a conservative effect on the role of commercial journal publishing. The need to do well in the UK RAE and its equivalents in other countries has consolidated the need to get published in the established prestigious literature – which in practice means the commercially published journal literature with well known journal titles of demonstrable quality.

At the same time, a climate of evaluation has also led to a need to make research as visible as possible – for research to be deemed "high quality", it has to be seen as such by as large a community of peers as possible. Open access is the perfect tool for this.

So, ironically, for the present at any rate, open access and commercial journal publishing seem to be mutually compatible and even complementary. What has changed this relationship is the overall environment in which research information is communicated.

For this reason, librarians have a professional obligation to understand the larger context of research activity in which they find their information practice situated. This brief paper is an attempt to shed some light on this.

What we see is that big movements in the research landscape have important effects on grass-roots LIS practice. In particular – we would argue – this means that repository librarians must come to grips with the role of repositories within the CRIS environment, as well as the relationship of repositories to the local campus research information system.

Whether the picture of the relationship sketched out herein is correct is up to debate. However, what is not so debateable is that the relationship is of enormous significance and will need to be analysed and better understood in the immediate future. The analysis offered above is an initial attempt to further that understanding.

Notes

1. "CRIS" definition available from the euroCRIS website (euroCRIS is the professional association of CRIS experts), available at: www.eurocris.org (accessed 7 June 2008).
2. JISC "VRE" (virtual research environment) programme, available at: www.jisc.ac.uk/whatwedo/programmes/programme_vre.aspx (accessed 7 June 2008).
3. CORDIS, the Community Research and Development Information Service for Science, Research and Development, available at: cordis.europa.eu/en/home.html (accessed 7 June 2008).
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11. St Andrews Digital Research Repository, available at: https://research-repository.st-andrews.ac.uk/ (accessed 7 June 2008).

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