

# **Don't Tease the Reader: Techniques for Making Social Science CRIS More Useful to Research Users**

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## **Summary**

This paper considers two abiding problems faced by CRIS in the social sciences: a lack of full-text content; and an inappropriate service model for research users. The paper describes market research that indicates precisely what kinds of services potential CRIS users are using. In the light of this, the paper looks at the progress and plans on these issues in one particular context, and looks to the next set of opportunities. The topics covered include eprints, the OpenURL standard, topical news and alert services. The paper concludes by reviewing the horizon for user-oriented CRIS, moving closer to a publication and mediation model, rather than a database model.

## **1 Introduction**

User orientation has not always been the hallmark of CRIS. However, as services are increasingly called on to demonstrate effectiveness, efficiency and value, CRIS need to pay close attention to what their users and potential users want, and what their competitors are doing. This is not just a matter of survival for CRIS. Policy shapers across Europe are now looking to research, and particularly perhaps social research, to inform policy. This is a real opportunity for CRIS to become embedded in the policy process, but it will only be taken if CRIS supplement their researcher focus with a focus on research users. In this paper, I focus on Regard (Regard), the database of the UK Economic and Social Research Council (ESRC). First, I outline some of the evidence upon which Regard has planned its development. Second, I describe some of the recent moves we have made to try to make the system more relevant to users. Finally, I note how far we still have to go if we are really to meet the needs of research users in the real world.

## **2 Background**

This paper considers two abiding problems faced by CRIS in the social sciences: a lack of full-text content; and an inappropriate service model for research users. The paper describes market research that indicates precisely what kinds of services

potential CRIS users are using. In the light of this, the paper looks at the progress and plans on these issues in one particular context, and looks to the next set of opportunities. The topics covered include eprints, the OpenURL standard, topical news and alert services. The paper concludes by reviewing the horizon for user-oriented CRIS, moving closer to a publication and mediation model, rather than a database model.

The scope of this paper is limited to CRIS focusing on grants and research outputs information, rather than those focusing on primary data. The paper is also specific to the social sciences, which have a particular relationship with research users as compared with STM. This relationship is currently couched in terms of 'evidence-based (or -informed) policy and practice'. That is, social science research is increasingly seen as a valuable source of information about 'what works' in social policy and practice, in order to inform their development (Davies et al. 2000). The relationship between social science and research users is, of course, more complex than this simple linear model would suggest. Nevertheless, it is clear that a wider range of research users is now looking to information sources in the social sciences in order to discover evidence to either support or critique policies and practices in the public sphere. Sadly, information sources in the social sciences have traditionally been both poor and fragmented compared with the STM world (Line 2000). This is for a variety of reasons, including the relative financial poverty of the social sciences, and the fuzzy and shifting nature of the concepts and related classifications. Many of the information sources have not been set up with any clear objective to inform policy and practice, as they are now being called on to do. Nevertheless, some useful services have been developed, and this paper concentrates on one, Regard.

Regard (Regard) is the grants and outputs database of the ESRC. It was set up in 1997 (and relaunched in 2000), and is run by the Institute for Learning and Research Technology at the University of Bristol. The main activities of the Regard team are:

1. Receipt of grants data in XML from ESRC, checking, adding to database
2. Contacting researchers and persuading them to submit output metadata
3. Linking grants and outputs records, cataloguing, checking outputs for available full text versions
4. Collecting final research reports (in PDF), cataloguing, linking to grants records
5. Maintaining and developing the technical architecture to support processes
6. Marketing to the key audiences (higher and further education, policy shapers, not-for-profit sector, media workers, commercial sector)
7. Management and evaluation

Regard is a successful service, with a growing number of searches (around 10,000 per month), and a widening user base among its key audiences. To help inform a new five-year development plan, extensive market research was conducted during 2001-3, including a large-scale survey and focus groups. The survey, in particular, has shed light on the service features that potential Regard users are looking for.

### 3 Market research

As a part of its market research, Regard undertook in 2001 a major (n=1051) survey of potential users of social research information. The survey aimed to cover such potential users in the private, academic, public (government and quasi-government), voluntary, media and trades union sectors in the UK. Of particular relevance to this paper, the survey covered the information sources used by respondents.

This paper focuses on users of social research and, in particular, on users of research who are related to social policy and practice, broadly defined. Survey participants were selected on the basis that their job title suggested that they used research information in their work, and over 90% of respondents confirmed that this was the case. This paper concentrates only on the public, academic and voluntary sectors, which acts as a first approximation for the domain of social policy and practice. An analysis of specific job functions given by respondents (among other things) confirmed that this approximation was reasonable. The public sector was represented by 385 political, policy development, research and management personnel in both central and local government-related organisations. The academic sector was represented by 214 respondents from a random sample of academics in subjects thought to be relevant to social research. The voluntary sector was represented by 219 respondents from a sample of NGOs above a certain size. As a broad approximation, then, survey respondents from the three named sectors can be thought to represent an important cross-section of users of research in the policy development process.

The Regard survey asked respondents to specify which information sources they used in their work. While over 90% of respondents said they used research information in their work, they were not asked only for research information sources, because it can be difficult to identify sources in this way. For example, a magazine article may be partly based on research, but this may not be obvious to a casual reader. The resulting list of sources was manually consolidated so that, for example, 'THES' and 'Times Higher Education Supplement' were treated as similar terms. This list of information sources was then analysed to reveal which sources occurred most frequently (Jacobs 2002). The results are shown in Table 1, which gives the top information sources cited by survey respondents in each of the three sectors identified above.

This table clearly shows that the most popular information sources among users of research information were those that offered some combination of: (i) full text documents with guaranteed provenance, for example, from government; (ii) topical, full text, second-order (that is, interpreted) information, for example, from well-respected journals or major newspapers; (iii) a link to the local information environment, so academics looked to sources available via the university library and government workers looked to government websites. CRIS are notably absent from Table 1. The source most like a CRIS, the website of the Joseph Rowntree Foundation,

Table 1 - The most frequently cited information sources by UK social science research users (both online and offline)

	<i>Academic sector</i>	<i>Government sector</i>	<i>Voluntary sector</i>
1	Journals	Local Government Association	Government: departmental websites
2	Databases	Government: departmental websites	Community Care
3	Internet / web	Department of Environment*	Major newspapers
4	Medline	Joseph Rowntree Foundation	Government: publications
5	University library	IDEA*	Local authorities
6	Government: departmental websites	Local Government Chronicle	BBC
7	Books	Office for National Statistics*	Joseph Rowntree Foundation
8	Times Higher Education Supplement	Department of Health*	Internet / web
9	Major newspapers	Community Care	Department for Education and Skills*
10	University websites	Local authorities	The Guardian
11	Web of Science	University websites	Local newspapers
12	Public library	Audit Commission*	University websites
13	BIDS	Local Government Information Unit	Department of Health*
14	Department for Education and Skills*	The Guardian	Journals
15	Department of Health*	Local Authority Research and Intelligence Association	Magazines
16	The Guardian	National Institute for Social Work / Social Care Institute for Excellence	Financial Times
17	Joseph Rowntree Foundation	Department for Education and Skills*	Internal research
18	BBC	Government: publications	Third Sector magazine
		Scottish Executive*	
		Info4local*	

\* Indicates a UK Government website

carries non-academic, full text summaries of its research.

A one-day follow-up focus group with a subset of respondents, undertaken in November 2002, reinforced these priorities, and especially emphasised research summaries, relevant information and secure provenance. We might, therefore, outline key success factors for information sources seeking to appeal to research users:

1. carry full text, including non-academic research summaries;
2. emphasise the provenance of the research, as a 'brand';
3. find a way into the user's local information environment;
4. become topical or, at least, regularly updated.

This research therefore suggested that CRIS such as Regard have two key limitations, discussed further in this paper. First, there is only limited full text available. Second, the information held is not delivered with an appropriate service model (for example, emphasising topicality) for many research users. Non-academic research summaries are not discussed in this paper, although there is some ongoing activity in this area.

## **4 The full text problem**

There are three types of full text available via Regard at the moment. There is a short research abstract produced at the start of a project, there is a full, peer-reviewed research report that appears up to two years after the end of a project, and there are links to such online versions of papers as the Regard cataloguers can discover when they add outputs to the database. However, it remains the case that the majority of the 75000 output records on the database do not contain links to full text, and this is a source of some frustration to users, especially those outside higher education (HE) who do not have easy access to scholarly (e)journals. Regard is addressing this problem in two ways: eprints and OpenURLs.

### **4.1 Eprints**

There is a worldwide movement seeking to make the full text of research outputs available online as 'eprints', openly accessible to all (Eprints). The technical issues associated with this programme are largely solved with the release of the Open Archives Initiative Protocol for Metadata Harvesting 2.0 (OAI-PMH), which is a protocol enabling the harvesting of metadata records over the web. These records can in principle conform to any schema, as long as a simple Dublin Core record is also available to ensure basic interoperability. In fact, much work has been done to build cross-walks between schema to support higher level interoperability, although relatively few services are yet exploiting this. However, the main problems facing this. However, the main problems facing the eprints movement are not technical, but organisational, cultural and legal. In

brief, these can be summarised as:

- Organisational: diverse stakeholders with varied interests are not yet working effectively either individually or collectively
- Cultural: academics are cautious about making their research widely accessible online
- Legal: the copyright in research publications is generally transferred to publishers in the current model

There is a large body of work underway in the UK (JISC FAIR) and Europe (OAFo-rum) tackling these issues, and Regard is a part of this effort. We are conducting a small-scale feasibility study, looking at the issues discussed above and those raised by attempting to link together Regard and an eprints archive. The precise future direction of eprints is uncertain, and the Regard project has emphasised some questions that will need to be addressed by the wider community before an effective link between eprints and CRIS can be forged:

1. At what level will the deposit of eprints best be organised; university, research funder, discipline or other? This depends on several factors, including funding streams to support deposit, organisational resources, interests and skills, relations between archives and researchers, and researchers' loyalties and preferences.
2. What metadata elements will be needed to ensure that descriptive and full-text records are accompanied by appropriate provenance and rights information? How can such elements be mandated at both data and service level?
3. Where data providers (home to the original deposited record) need to demonstrate to their funders that they are providing value for money, how are they to do this when their records have been harvested and are being accessed via unknown, third-party services?
4. How can the legal framework of publishing accommodate greater access to the fruits of research (much of which is publicly-funded), without compromising the rights of authors or the peer-review process?

These questions are being addressed, and answers will be found. Regard is actively working with the eprints community to ensure that the obvious potential synergies between eprints and CRIS are exploited to the benefit of research users.

## **4.2 OpenURLs**

Eprints are a medium to long term solution. In the meantime, Regard's users do not have access to sufficient full text. To address this immediate problem, we are implementing a solution based on the OpenURL standard (OpenURL). OpenURL is a standard format for interoperability between information services. Acting like a standard hypertext link, it allows bibliographic metadata about an object to be sent to an OpenURL resolver, in turn providing valid searches of a set of relevant resources. In Regard's case we are using three approaches. First, we are using a Joint

Information Systems Committee (JISC) funded router to various resolvers geared to the education sector, and offering access and direct links into Athens (Athens, see below) enabled resources. Second, we are using a local resolver capable of linking into other resources that are related to the records stored in Regard, and to which our users tend to have access. Finally, we will offer “canned” Google searches relative to the metadata present in the OpenURL link. A major element of the OpenURL standard is that it determines a user’s subscription and access rights, showing them only the services they have access to, and sending them directly within these services when possible. We will look into the possibility of implementing this aspect as we develop user registration within Regard. The current Regard solution is dynamically to generate an OpenURL for every output record as they are displayed in response to a query. These OpenURLs will supplement any existing links to full text, as recorded manually by Regard cataloguers, and will point mainly to freely accessible resources. This development is designed to make Regard a much more useful resource for research users, especially outside education. However, it is not only the lack of content that such users find difficult, but also the style and service model of Regard itself. It is to these issues that I turn now.

## **5 The service model problem**

Weiss (1999) has noted that “intermediaries who seek to link research and policy must adapt their dissemination strategies differentially for bureaucrats, legislators, professionals, practitioners and the public”, and Koopmans (2002) has described in detail who these users might be for a CRIS. Outside HE, research users often want information that is both topical and accessible, and they have limited time to go out and search for it. In a world of information glut, the provider must make life simple for the user, or the user will simply look elsewhere. That is not to say that complex research should be ‘dumbed down’, or simplified by those not qualified or skilled to do so. It is to say that the service model needs to be right. Regard has presented itself simply as a web database with decent usability and accessibility, but two recent developments are designed to highlight topical or new research, and there are further enhancements planned.

### **5.1 In the News**

Social science is perhaps distinct from STM in that it is relevant across a wide range of stories that make up the daily news agenda. Where such stories persist or extend over two or three days, there is a potential market for social science research that bears on them. Regard has established an ‘In the News’ service on the front page, which is updated daily by members of the team. This links a high-profile news story from a reliable source (e.g. the BBC) to a ‘canned search’ of Regard. That is, a

search query is built up by the item author, that both bears on some aspect of the news story, and gives a reasonable results set from the database. This can occasionally call for some imagination, but these more difficult items will probably be the ones to add the most value to the service, offering users the opportunity for a fresh insight into a news story.

## **5.2 New Research and Reports**

While 'In the News' reflects the news agenda, new social science research can often influence both news and policy. As noted above, Regard receives a monthly XML transfer of new grant data, recording the projects starting that month. Regard has exploited this to generate a 'New Research' feature alongside 'In the News'. This highlights a different new project each day, ensuring again that there is always something fresh on the Regard front page. At the other end of the project lifecycle are the full-text research reports that are added after they have been peer-reviewed. A monthly archive of new reports ensures that the latest findings are easily accessible for users.

One useful byproduct of these enhancements to the service model is that the archives of 'In the News' and the 'New Research Reports' are accessible to Google and other search engine robots (unlike the rest of Regard, which is hidden behind a database). This means that Regard is boosted in the search engine rankings for users looking on topical issues, rather than having to rely on its collection level description or metadata.

## **5.3 Further service model enhancements**

All of the above developments are worthwhile. However, they do not fundamentally break the 'web site' service model. In other words, they still rely on people coming to the Regard site to discover the information, rather than being related more closely to the user's own information environment. In order to address this problem, we have studied the research (and conducted our own), and have concluded that there are basically two kinds of non-HE user. First, there is the user who is embedded in a professional community, who needs information to support her daily practice. Second, there is the user who is less tied to an organisational network, is more mobile. Daniel Bell (1999) has called both of these the 'knowledge workers' in an information society. Regard has plans to release solutions to support each of these groups, using portal syndication for the former, and email for the latter.

So far, with CERIF (CERIF) and allied initiatives, CRIS have only solved the information storage aspect of their function. To start to address the access function, Regard is looking to produce regular tailored alerts and news summaries, distributed using push technologies. These will alert the user to new research projects starting, new full text research reports available, and recent topical 'In the News' features. The alerts require a number of questions to be addressed:

### 5.3.1 *Who is the user?*

In order that users can feel confident in accessing information using push technologies, they need to be assured that the systems they are accessing are secure. In order to operate effectively, the systems need to know who the user is and what they are entitled to do. This is a matter of authorisation and authentication; within the UK HE, the Athens system (Athens) is the *de facto* standard, but outside HE there is no one clear standard. The Regard email alert service uses a simple registration process, together with a facility to email the site administrator to suspend or end a subscription. This is not an ideal solution to authorisation and authentication, but is the best interim solution possible within the constraints of the existing system. It is reasonable because of the high level of trust within the specialist communities that use Regard. It also avoids imposing yet another password barrier on users. However, a future release would use a more secure registration mechanism, which would also be the basis for value-added services.

### 5.3.2 *What is the user interested in?*

There are basically two ways to discover this. Either the user tells the system explicitly (by selecting or entering keywords), or the system infers the users' interests by monitoring their behaviour. At Regard we have adopted the former approach, based on 17 ESRC-defined discipline codes. Again, we are aware that this is not an ideal solution, and that a more user-oriented approach would be better. For example, the UK Government has released a comprehensive 'Category List' (Government Category List), that is oriented to policy areas, and would offer non-academic users more relevant profiling options.

### 5.3.3 *What is the match between the user's profile and the available information?*

Whichever mechanism is used to capture the user profile, it needs to be converted into a classification scheme or relationship framework (perhaps an *ad hoc* one based on behaviour types, such as used by Amazon (Amazon)), against which the database contents can be matched. Because grants issued by the ESRC are classified by discipline, this is relatively straightforward. However, because we planned to include recent 'In the News' items in the alert service, then these items had to be classified by discipline as well. In a future release, we hope to implement Amazon-like user tracking to enable Regard to make real-time recommendations to users based on their or others' past behaviour.

### 5.3.4 *How should the information be delivered?*

Portal syndication using RSS channels, and email, are the obvious routes. It is unlikely that there will be high demand for SMS messaging of grant information, although we should not lose sight of the wireless web. The first release of the Regard alert is aimed at mobile or email-oriented users, but an RSS feed is planned.

### 5.3.5 *What is the follow-up?*

If this process is understood as a user engagement exercise, then it is important that

feedback and evaluation is built into the systems from the start, rather than being an afterthought. Regard has been active in liaising with users, and will be seeking feedback in order to better target and improve the alert service. However, while we have been able to show year-on-year increases in overall usage, and in usage outside higher education, constraints in Regard's logging functionality currently prevent a targetted monitoring of the success of new developments such as the email alert and 'In the News' features.

## **6 The horizon**

At Regard, we are not satisfied with the extent to which research users find what they need. We have been talking with users of social science research (for example, in our user group, in our marketing and outreach activities, and writing a book on this topic (Jacobs forthcoming)), and have a clear idea that what many of them are looking for is a much less 'academic' feel to the information. At the moment, CRIS are oriented to the supply side of information, to where it comes from, to the universities and researchers, and research managers (Zimmerman 2002). While this orientation is important and should not be lost, it is vital that there is a much greater focus on the needs of research users (Lepori 2002). Technologically, work on the semantic web and the Grid will help, but in practical service-level terms CRIS sponsors need to embed CRIS within their external-facing activities. Research users want research summaries and reports written in plain language, not in academic jargon (that is, they want a 'translation service' (Scott 2003)). They want any policy and practice implications to be spelt out clearly. They want information that is timely, in the right format, and not limited to research funded by a particular body. They want contact details of experts that are able and willing to speak to policy, practice and media communities in a way that does not alienate one side or the other. These are not technical issues, but they have a major impact on the role of CRIS. They are complex issues, covering such matters as editorial control, managing a commissioning process, liaising with researchers and writers, intellectual property rights, workflow procedures, funding, and so on. At Regard we have submitted an Expression of Interest under the EU's Science in Society programme (Jacobs 2003), which describes some of the work that would be necessary in order to achieve some of these goals across Europe in the social sciences. We are also talking with organisations outside the education sector, such as trades unions and local authorities, about how to make the research they conduct more widely available, and their needs in terms of using research conducted elsewhere. Finally, we are also talking with exemplar services in the UK, such as the Centre for Economic Policy Research (CEPR) and id21 (id21), whose mission is to make research accessible to policy and practice communities. CRIS can learn from and collaborate with such services. Evidence-based policy and practice is a key concept in the UK and

across Europe (under different names), but it means nothing if research evidence is effectively unavailable both to policy shapers and practitioners.

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