research information network

Overcoming barriers:
access to research information content
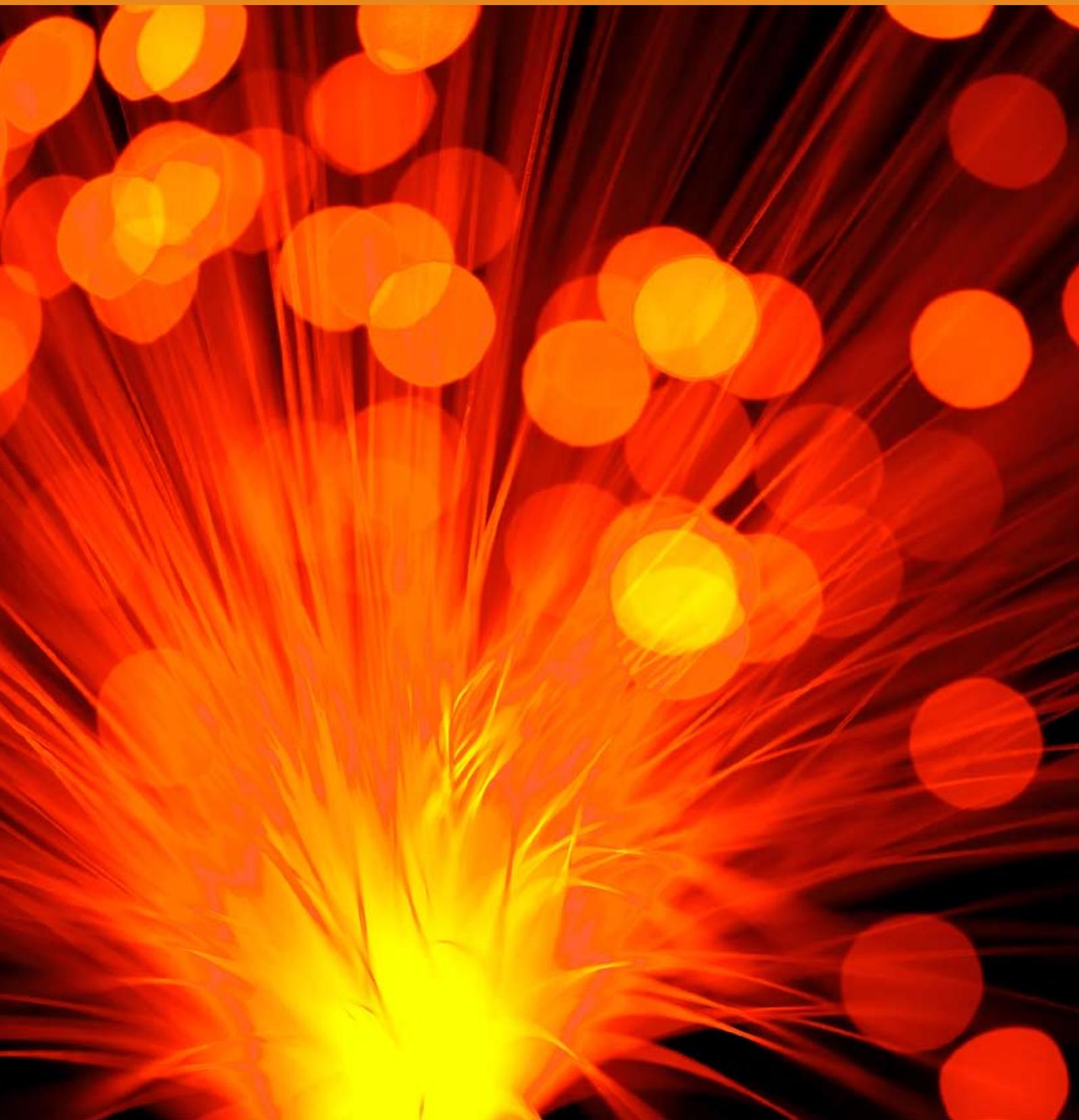
The research on which this report was based is from five separate studies (see page 5). The full reports are available at www.rin.ac.uk/barriers-access

Acknowledgements

Contents

1. Introduction

This report examines the barriers researchers encounter in accessing the information required for their research, as well as the approaches researchers use to overcome them.

Researchers seek access to a wide range of material, most obviously books and journals, but also artefacts, sound and image files, and data produced by other researchers, by commercial companies and by public bodies. They want access in a variety of ways from their libraries, laboratories, office or home, on their desktops and in person. In so doing, they may encounter a number of difficulties.

This report presents the findings of five studies (see page 5) commissioned by the Research Information Network (RIN) to assess the nature and scale of key restrictions on access to information resources of importance to researchers, the impact of these restrictions, and ways in which they might be alleviated or overcome.

This report builds on earlier work by the RIN on discovery services (2006) and researchers' use of academic libraries and their services (RIN/CURL, 2007) and seeks to address a problem identified as the 'discovery-access gap':

' The main frustration is not with research discovery services...but with the problem of subsequently accessing identified sources and materials. The 'last mile' of the process which actually delivers the document or other source that has been searched for is the focus of concern. '

Key issues

We cannot claim that this report provides comprehensive coverage of the full range of access barriers; but we believe it presents a useful picture of the major problems that researchers most frequently face. The key issues the five projects focused on were:

1. How frequently researchers in the UK are hampered by being unable to gain access to information resources – whether in print or digital or other forms – that may be relevant to their research but are not available in their own institutional library.

2. Researchers' perceptions of how easy (or not) it is to gain access to such material from other sources, the nature and extent of any problems they may face, how they seek to overcome such problems, and any impact this has on their research.

3. How academic and research libraries provide and manage access for non-members of their host institution to the resources they hold or licence, variations between them in the services they provide for non-members, and barriers to providing better levels of service, particularly in access to digital resources.

4. The nature and extent of differences in access to information resources for members of research pools based in different institutions in Scotland, and how such differences are being, and might be, overcome.

5. The nature and extent of any problems researchers may face in securing access to relevant information resources that are not formally published but may be subject to restrictions relating to privacy, confidentiality and other non-cost barriers.

Table 1: The five studies and areas of enquiry

Report title	Area of enquiry	Research team	Abbreviation
How researchers secure access to licensed content not immediately available to them	Researchers' and librarians' perspectives on key issues 1 and 2	Outsell	ALC
Perspectives from libraries	Library perspectives on issue 3	LISU	PFL
How institutions manage access to information resources for non-members	Researchers' and librarians' perspective on issues 2 and 3	Outsell	NM
Information access for members of research pools in Scotland	Researchers' and librarians' perspectives on issue 4	Key Perspectives	RPS
Non-cost barriers to accessing research resources	Researchers' perspectives on issue 5	Rightscom	NCB

The full reports are available at www.rin.ac.uk/barriers-access

Chapter 2 *draws mainly on the ALC and RPS studies and focuses on researchers' behaviours when they cannot readily gain access to e-journals and other licensed content*

Chapter 3 *draws on the ALC, NM, PFL and RPS studies to give an overview of the approaches researchers use to access licensed content not immediately available to them via their own institution's library, and how libraries facilitate this*

Chapter 4 *deals specifically with the services libraries offer to visiting researchers, with evidence from the NM and PFL studies. It sets out the arrangements covering both print and digital materials*

Chapter 5 *draws on the NCB study to set out some of the problems researchers face in securing access to material not restricted by licence barriers, but by issues of confidentiality, privacy, proprietary formats and so forth. It examines the nature of these barriers, and how they might be reduced*
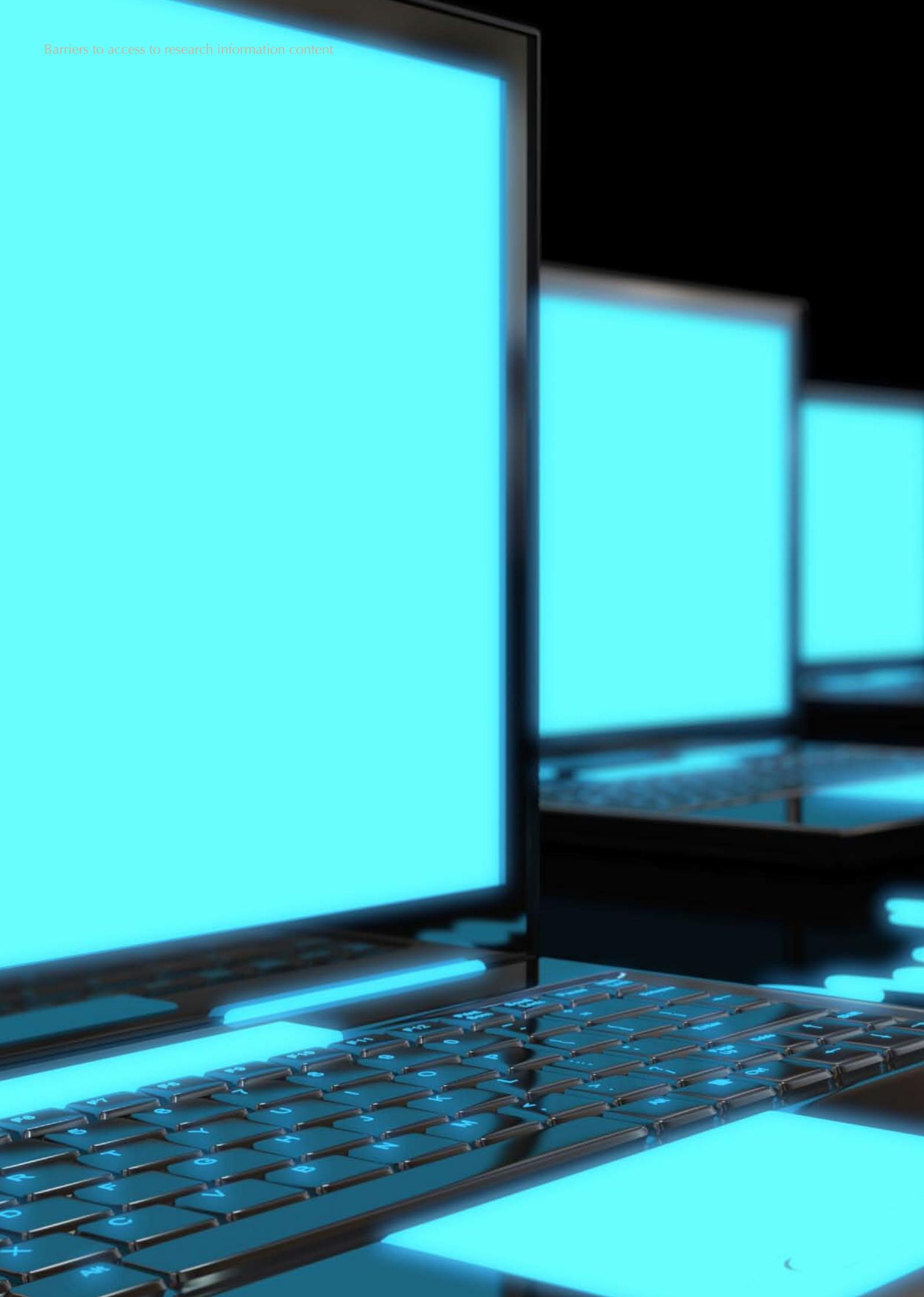
2. E-journals and other licensed content

The amount of licensed content to which researchers have ready access has grown enormously over the past decade. But no library or institution can provide access to all the resources that a researcher might need. Our study of Scottish institutions showed that of the some 450 chemistry journals listed in Web of Science, over 300 are available in at least one Scottish university; but only 80 are held by all six of the institutions in the ScotCHEM research pool, and 52 titles were held by only one or two institutions. Similar patterns are shown in economics and in law. So researchers must resort to sources other than the licensed content available directly through their own institution to gain access to large proportions of the content that may be relevant to their research.

The ALC study used a web-based survey to assess the nature and scale of the difficulties researchers face in gaining access to licensed content. Not surprisingly, most of the problems focused on e-journals. Of the 800 respondents, over 40% said that they were unable readily to access licensed content at least weekly; and two-thirds at least monthly (see figure 1).

Figure 1: How frequently researchers are unable to access content from their own library
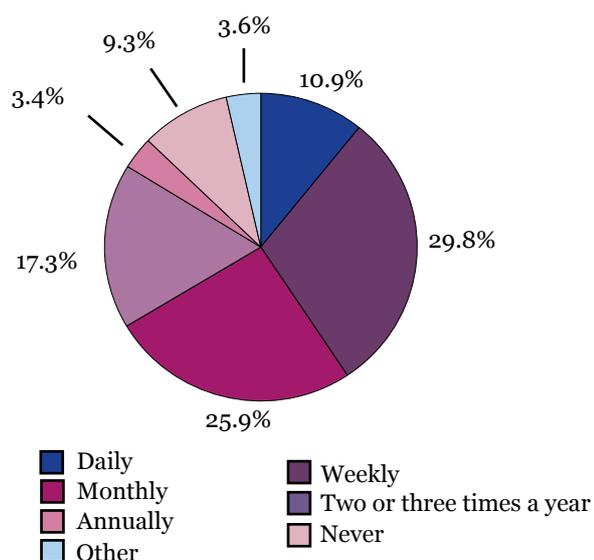
The respondents were self-selecting, and there may be a bias in the sample towards researchers who do encounter such difficulties. Nevertheless, the scale of the response suggests that the problem is a significant one.

Figure 2: Reasons why content believed to be unavailable
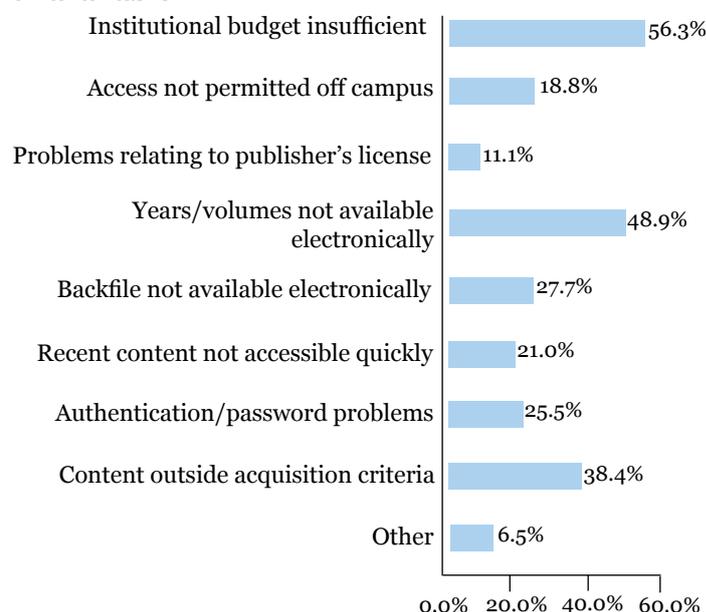
The key reasons for failing to secure access were perceived to be:

• that either particular volumes (49%) or the backfiles (28%) of particular journals were not available electronically, or

• that the library had not purchased a licence for the content, because of budgetary constraints (56%) or because it did not meet their acquisition criteria (38%), or

• technical limitations such as log in/authentication problems (26%) or problems with proxy servers and off-site access (a particular problem for researchers – a majority in the humanities and social sciences – who spend significant amounts of time away from their home institution) (see figure 2).

2.1 Discovery problems

When content is not immediately available to researchers, there may be real restrictions in gaining access (for example, because no licence has been purchased); or it may be that the problem lies in search and navigation, combined to some extent with lack of researcher expertise. As documented elsewhere (RIN, 2006), the complexity of discovery options – with many external search interfaces not well integrated with library systems – is often the issue. When embarking on a new line of research, most respondents – especially in the arts and humanities – begin by using their institutional library catalogue (60%) and/or Google Scholar (56%) (see figure 3).

But many researchers – especially in the sciences – start their searches by using services external to the library catalogue such as Web of Science or PubMed. Around 80% of all respondents follow links from an external service either daily or weekly, and two thirds report weekly or monthly problems in accessing content identified by such services. When faced with a problem in accessing content identified through an external service, nearly as many will try another similar service (48%) as will consult their own institution's library catalogue (55%). It should be noted, however, that the RPS study found that researchers in some small institutions do not have access to important databases and finding tools that are important in their subject area.

The unsatisfactory result of this cluttered picture is that researchers regularly find that content they thought to be unavailable is in fact available via their own institution. Half of all respondents admit they have found this to be so on up to five occasions in the past year. They ultimately discovered and gained access to these resources via a combination of further searching of the library's resources (62%), discussions with librarians (20%) or by chance (29%). It is impossible to say how often available material remains obscured by discovery barriers. Librarians believe that researchers struggle to cope with the complexity and diversity of different publisher interfaces; and they are keen to improve their engagement with researchers so that they can help

Figure 3: Starting point for research
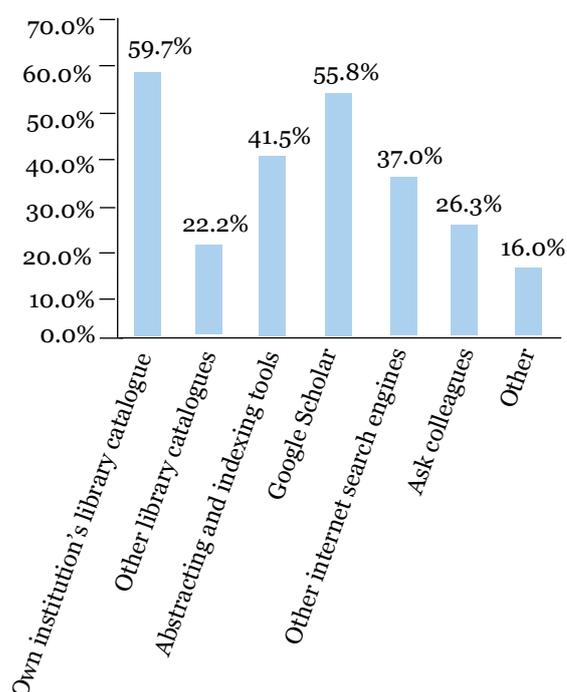
in updating and improving their skills in using discovery tools and their awareness of the content and services that are available to them. Many researchers agree. Ultimately, however, the need is for more intuitive and better-integrated discovery tools.

2.2 Impact of unavailable content

Over 80% of ALC survey respondents said that the difficulties they encountered in gaining access to content had an impact on their research, and nearly a fifth said that the impact was 'significant'. The proportions of those who felt the impact as having a 'significant' impact on their research were higher in the arts and humanities and social sciences, and at non-research-intensive universities.

The most common impacts are delays in research, and inconvenient and disruptive interruptions to workflow: researchers report losing their thread, having to revisit and adjust research at a later date, and in some cases forgetting to go back to fill a gap. Lack of access is also a hindrance to collaborative working, a particularly important issue for the research pools in Scotland. It can also lead to delays in the submission of papers and of bids for funding. But researchers are also concerned that lack of access creates bias in the sources they use, and that it may compromise the quality of their work, particularly in relation to literature reviews (and more especially systematic reviews). Peer reviewers are also hindered when they cannot access sources cited by an author. Scientists worry that lack of access to the latest findings and methodologies may lead them to undertake redundant work. And some researchers will change tack or even not pursue certain lines of enquiry at all.

Many of our respondents observed that they cannot assess the impact of not being able to access material they have not seen, but that it undermines their faith in the integrity of their own work. When awareness of important or cutting-edge findings in a fast-moving area is critical to the credibility of a researcher, access to the latest publications is essential, and no substitutes will meet the need.

> **In sum, the lack of immediate access to electronic content is seen by researchers, 'as a hindrance which slows their progress and can mean important information is not taken into account. Most manage to work around these limitations, but are frustrated by them' (ALC).**

3. Methods for accessing content not immediately available

When researchers find that the licensed content they require is not available from their own institution, they may try to obtain it through a number of channels. Inter-library loans (ILL) and document supply (DS) services are the most popular methods, used by over 70% of those responding to the ALC survey, followed by requests to colleagues (see figure 4). Arts and humanities researchers are the most frequent users of ILL services, and also of visits to other libraries. But researchers rarely visit other libraries nowadays for the purpose of journal access; rather it is for access to print. Pay-per-view is the least popular means of gaining access, used by only 22% of respondents, and then only rarely, mainly because of its cost.

Figure 4: Methods used to obtain access to licensed content not immediately available
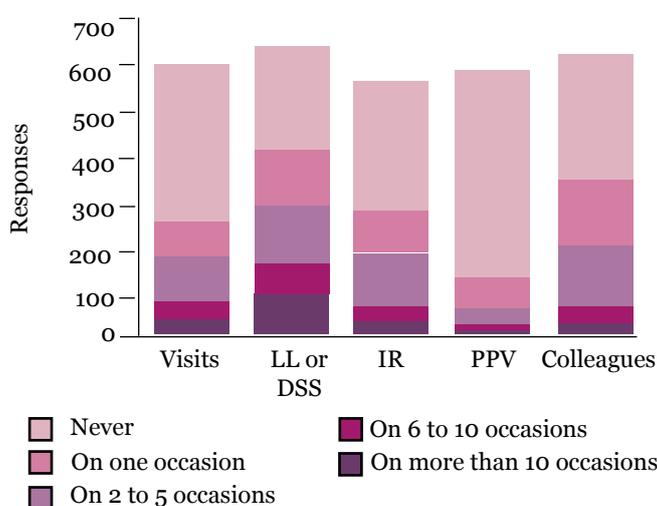

Librarians were asked an equivalent question as part of the PFL study, which revealed that where material is not available three quarters of higher education (HE) librarians' might offer inter-library loans, 70% promote reciprocal access schemes, and the same proportion suggest specific alternative libraries.

Less than half the libraries surveyed would suggest open access resources as an alternative, suggesting they have not yet reached the critical mass of content to be productive.

Despite the importance attached to ILL and DS, use of both has declined significantly in recent years. SCONUL members' expenditure on ILL has declined by a total of 22% over the last five years; and the number of loans by 43%. There have been similar falls in volumes of DS from the British Library. Nevertheless, both are still widely used, and 49% of those using them say they are 'very effective'. They rank just ahead of requests to colleagues (45%) and pay-per view (41%) as the most effective methods, and well ahead of using institutional repositories and visiting other libraries. On the other hand, both ILL and DS are criticised by researchers for being slow and sometimes bureaucratic.

One of the reasons for the decline in ILL and DS usage identified in the RIN/CURL 2007 report was that researchers 'adopt a variety of pragmatic and informal approaches – by-passing the library – to overcome barriers to access.' Science researchers frequently contact authors or colleagues at other institutions to obtain content they need. They like the speed and effectiveness of doing so, even though they are cautious about the danger of irritating their colleagues. Such practices are less common among arts and humanities researchers, presumably because the content they need is often not in digital form, so cannot readily be provided to them by their colleagues over the internet.

Other resourceful ways to find licensed content include searching online, primarily via Google Scholar and Google Books, to seek out a version of an article or at least partial access to book content; signing up to free trials with publishers for temporary access; accessing preprint servers; and utilising society memberships and personal subscriptions. Institutional repositories get mixed reviews: some researchers are not sure what they are. Finally, for books there is the option to purchase. Libraries may choose to purchase requested materials, and the PFL survey found that non-HE libraries were particularly likely to do so. And researchers themselves often resort to purchasing books, particularly out-of-print ones which are available second-hand, when other options fail.
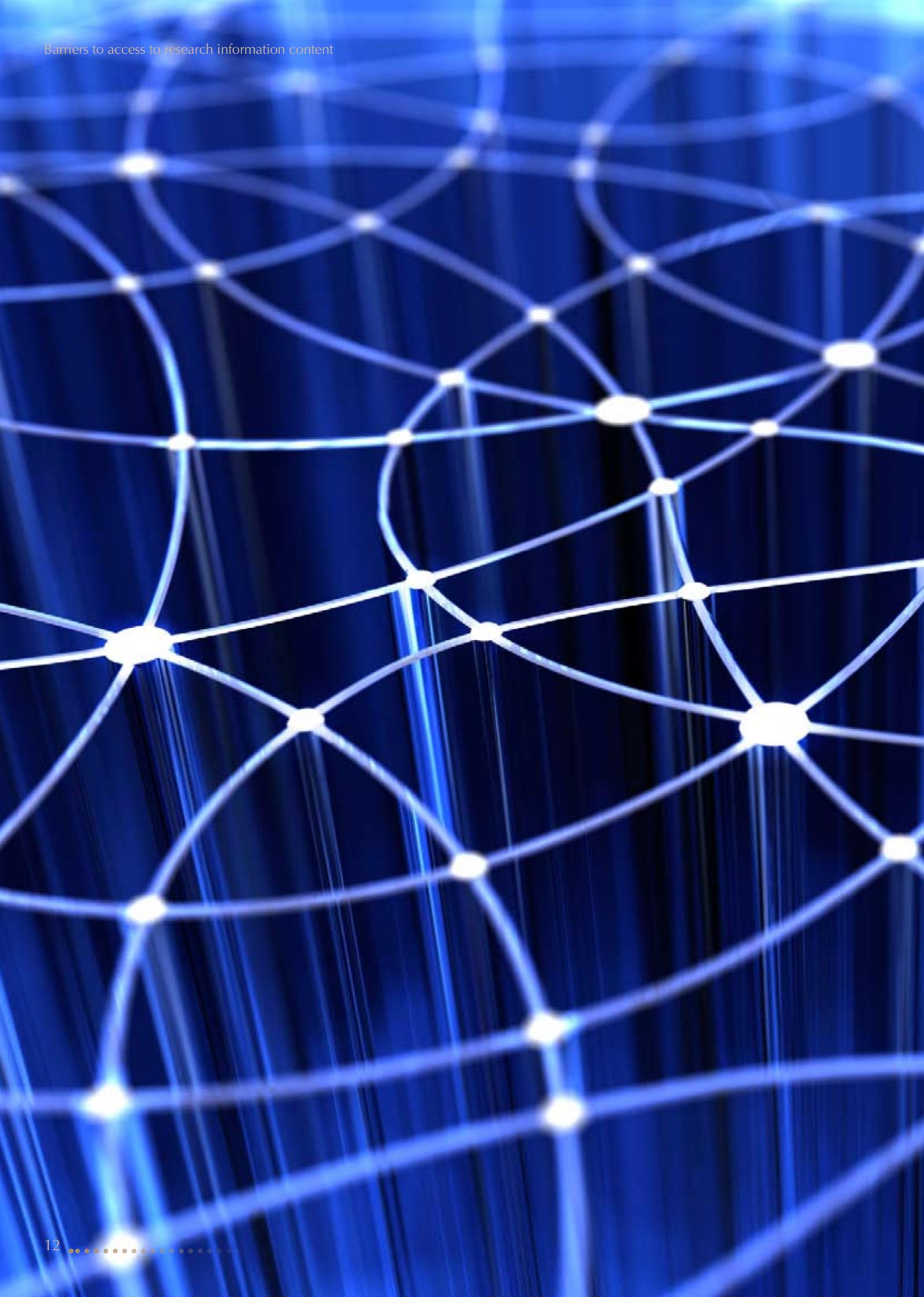
4. Accessing material at other institutions' libraries

Many researchers frequently work away from their home base in the course of their work, and while they seldom if ever go to other libraries specifically to get access to e-content, they may wish to secure access during the course of a visit for other purposes. Some researchers, especially in the arts, humanities and social science, do make special visits specifically to get access to books and other printed material not available in their own library. As described in detail in the PFL report, various initiatives have sought to provide access to the resources of the HE sector as a whole – notably the SCONUL Access scheme, Inspire, and the HAERVI report and toolkit (2007), which provided a comprehensive series of recommendations to improve access to e-resources for walk-in users. An account of the current reciprocal access arrangements is provided in the Appendix to the NM report.

The RIN/CURL 2007 study found that researchers' use of libraries other than those in their own institution had decreased significantly since 2001, but that the trend was expected to level off in the future. The NM and ALC studies suggest that the trend has indeed reversed. Although for many researchers the time and cost involved in visits to other libraries are prohibitive, this is less of a problem for researchers within easy reach of London, Oxford and Cambridge. There are similar well-trodden paths for Scottish researchers heading to Edinburgh and Glasgow. Both librarians and researchers reported higher numbers of visits than implied in the RIN/CURL study only two years ago: how 22% of researcher respondents use other libraries weekly, and a further 27% monthly.

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55% of arts, humanities and social science respondents to the NM survey do so monthly or more frequently, compared with just 27% of STM respondents. Of those who do use other institutions' libraries, a quarter use just one alternative library, and over two thirds use between two and five.

From the librarians' perspective, an increase in the number of external visitors seems to be on the whole a welcome development, as home researchers' visits to the library building continue to fall. External visitors are seen as raising the profile of the institution as a whole, and there is little sign of any resentment associated with any resultant increases in workload. Some librarians believe that electronic access for external visitors is the key issue: if it remains restrictive, these visitor numbers will tend to decline; if becomes less restrictive, numbers will increase.

4.1 Managing access

Libraries' policies for access by external users may be broadly categorised as either open (where any visitor can access the library for reference purposes) or restricted (where visitors must register with the library to gain access). Practice appears to be mixed: the PFL survey indicates that 47% of HE and 45% of non HE libraries 'never' require registration for reference access, while 34% of HE and 45% of non HE libraries 'always' do. Many arrangements are flexible, with formal registration required only for those wishing to use the material regularly or to have borrowing rights. Most libraries have a separate registration process for visitors who wish to access electronic resources (where this is permitted).

Libraries are generally positive and fairly satisfied with their current access arrangements for allowing access to researchers from outside the institution with around 90% being confident current access arrangements work 'very well' or 'fairly well'.

Researchers tend to concur, agreeing that registration and access are generally managed quite well. The documentation required for registration usually takes the form of the home institution/library card (76% of NM respondents), a SCONUL Access card (26%) or proof of address (26%). Over 70% of respondents were able to enter a library and start productive work within 30 minutes of arriving for the first time, and 42% were processed within 15 minutes. Nevertheless, researchers would prefer to get rid of the need to register altogether and have a one-card-accesses-all system.

In most cases registration is free. The handful of fees paid were generally for once-only access or for borrowing rights.

4.2. SCONUL Access and other reciprocal access schemes

Most libraries belong to local, regional or national reciprocal schemes which provide access, including borrowing rights, to their print resources. SCONUL Access (along with SCURL Research Extra in Scotland) is by far the most important of these schemes, covering all UK universities except Oxford, Cambridge and a few specialist institutions. Other partnership arrangements between HE libraries are tending to lapse. They remain important, however, for members of institutions that are not formally part of the HE sector, such as hospitals not formally affiliated to a university, and non-university research institutes. Thus the M25 Access and Borrowing Scheme is specifically for researchers at selected institutions within the M25 that are ineligible to join SCONUL Access because they not part of the HE sector, and provides access to academic libraries in London.

The RIN/CURL 2007 report concluded that the SCONUL Research Extra scheme which preceded SCONUL Access, 'could go a long way towards solving access problems related to monographs or research texts that are otherwise difficult to locate and obtain'. That may be so, but the NM survey suggests that only a minority of researchers who make use of libraries

beyond their home institution are members of any reciprocal access scheme, and only around a third are members of SCONUL Access. Membership of the scheme seems to be highest at the non-research-intensive universities but low among researchers at Russell Group institutions. And it is much commoner among arts, humanities, and social sciences researcher than among their science and engineering colleagues. [See figures 5 & 6]

Figure 5: Membership of access schemes
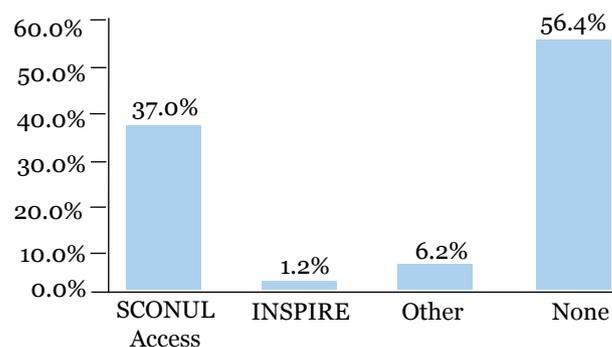
Analysis of data from SCONUL Access itself shows that both membership and the number of loans rose steadily from 2003-04 to 2006-07, but fell back slightly last year (2008) with the exception of the new category of band C (full-time taught postgraduate) members. This may be the result in part of the consolidation of formerly separate schemes under the single SCONUL Access arrangements and brand. The number of loans per member has continued, however, to increase.

As noted above Oxford and Cambridge universities are not members of SCONUL Access, but their libraries receive many visitors from other institutions. Oxford has a formal process that requires written application, and Cambridge invites would-be visitors to complete an online application form or make a prior appointment (although some 50% of visitors who use the library simply turn up unannounced and are admitted).

Figure 6: Membership of SCONUL Access
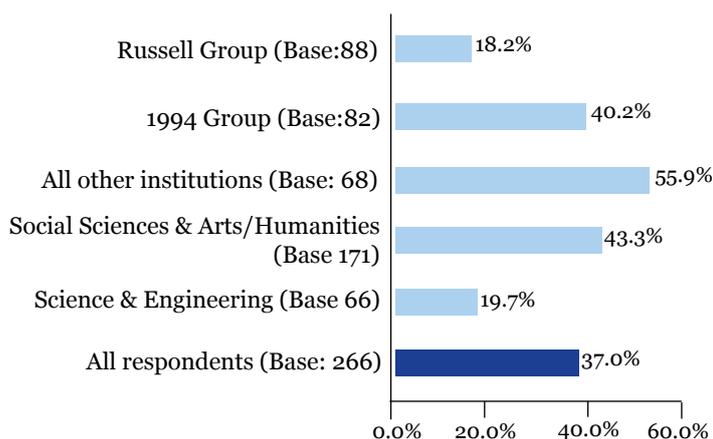
4.3 Print access

Researchers give a positive picture of access to print resources at other institutions' libraries. Over 50% of respondents to the NM survey felt reference access to print resources was similar to that provided by their own institutions. Some institutions, however, restrict access to materials in short-loan collections, and researchers are very conscious of such restrictions, with 33% of respondents saying that access is thus worse than at their own library. Reference access to special collections is in most cases open to visitors on the same terms that apply to members of the home institution.

Borrowing rights may cause more difficulties, especially for those who are not members of SCONUL Access. The relatively low take-up of membership among respondents to the NM survey may explain why 57% of them said that borrowing rights were worse than at their home institution, with a higher proportion among arts, humanities and social science researchers (65%). Restrictions on borrowing rights for people outside the SCONUL Access scheme do not, however, seem to generate significant resentment or concerns, perhaps because non-members of institutions tend to visit libraries to consult rather than to borrow

material. Some institutions charge fees for various associate membership categories (which include the right to borrow). But from the librarians' perspective, borrowing does not generate the same 'heat' as denial of access to electronic resources.

Of more concern is that the range of accessible print resources may be increasingly threatened by the move to e-resources: space constraints often mean that libraries cannot keep print copies on shelves when they also have an electronic version, even though they are aware that this may create problems for external users in gaining access to research content.

4.4. Accessing other institutions' e-resources

The RIN/CURL 2007 study found that, "as researchers increasingly work away from their home institution or wish to use the resources of another institution as a matter of routine, there is a need urgently to address the issues surrounding reciprocal access to digital resources". Many of the issues were addressed in the HAERVI report in the same year. But the case studies reported on here indicate that the problems have not yet been resolved.

Only about a third of the research libraries surveyed in the PFL study allow external users any level of access to licensed e-resources, although of those that do, nearly half plan to review their policies. At present only Oxford, Cambridge and London University's Senate House Library provide anything remotely approaching full access to journals, databases and other e-resources for walk-in visitors. The category of visitor makes little difference and a SCONUL Access card gives no real advantage in access to electronic resources. No library allows remote access for non-members.

Responses to the NM survey paint a mixed picture from researchers' perspectives. Overall 47% rate access as broadly similar to that at their own library, 33% rate it as worse (which in most cases means that there is no access at all) while 20% say it is better. A particular problem in Scotland arises for staff in

some subject areas from smaller institutions who are members of a research pool, but cannot use the libraries of other member institutions to gain access to databases useful to their work.

Where libraries do allow access, the main methods are through dedicated PCs or 'kiosks' or through IP authentication, relying on a valid user ID being provided to approved external users. The provision of dedicated workstations varies widely: for example, Cambridge University Library has 100 such terminals, while Manchester University has five. Libraries subscribing to the JANET roaming service may also offer access to Athens-managed resources by allowing HE visitors to log in from personal laptops, with their home institution credentials. It is notable, however, that only a quarter of librarians reported that their institution had signed up to the roaming service, while nearly half did not know whether or not their institution had done so. Shibboleth, the new federated access management system, has a higher profile, and operates at a more granular level than the Athens service.

From the visiting researcher's point of view, the right to print materials accessed on screen is a significant issue with 46% of NM respondents rate access to printing as worse than in their home institution ('worse' access includes no access at all).

4.5 Drivers and barriers for access to e-resources

The key driver for those libraries which provide access to e-resources is user demand, and in particular researchers' expectation of desktop access, especially to the e-resources that are replacing the hard copies that were formerly available to external visitors. It should be noted, however, that this demand is not felt everywhere: 12 librarians identified lack of demand as an important constraint on their taking action to improve access to e-resources by non-members.

Increasing user demand is closely associated, of course, with the increasing volume of e-resources, and with developments in the infrastructures through which they are made accessible. Several

librarians commented that JISC model licences are helping to open up e-resources to visiting researchers by simplifying the interpretation of licence terms, and allowing walk-in user access.

On the other hand, there is a widespread consensus among librarians that licensing and technical restrictions are the most influential factors in limiting access to e-resources and frustrating desires to widen access. Lesser barriers include a lack of space (which may decline in importance as increasing numbers of researchers use their own laptops); limited library resources to set up workstations and assist visiting researchers; and visitors' lack of awareness of the services available to them.

4.6. Licensing restrictions

Licensing restrictions are described by librarians, especially in the HE sector, as a 'crunch issue', and the single most important barrier to providing visitor access to e resources (Figure 7). Librarians are concerned by the complexity of publishers' licences, and the legal language in which they are written. The sheer number of licences, the variations in their terms, and the variety of formats in which they are held (paper, database, PDF scan etc) makes checking them slow and labour-intensive; under time pressures, librarians prefer not to risk misinterpreting licence terms, but stay on the safe side by refusing access to all external users. They also complain that some publishers are very reluctant to negotiate arrangements for wider access – for groups of affiliates or alumni, for example – even in return for increased fees.

Although some progress has been made on these issues, particularly through the JISC and other model licences which allow for access by 'walk in' users, this does not apply to all electronic resources. And the JISC Additional Authorised User licences require libraries to negotiate on an individual basis, and few libraries seem to have done this. Publishers, on the other hand, express some surprise that librarians see licensing as such a major barrier. Many say that they do not seek to restrict access for walk in users, and claim that 'licensing should not be seen

as a barrier to access. The trend is towards licences allowing more to be done, certainly more than people understand to be the case'. They suggest that librarians are being too cautious in not fully exploiting licences, and that the more significant issues are libraries' capacity to manage walk in use and access to local networks.

The HAERVI report in 2007 recommended that libraries should maintain locally a list of walk-in access conditions for licences

they have negotiated directly with publishers and aggregators; 40% of HE and 29% of non-HE libraries now do so. But the Registry of Electronic Licences (RELI) project promises to establish the user requirements for a registry which would enable significant licence terms to be made accessible and machine-understandable. This would provide a much-needed, readily-accessible summary of licence terms so that libraries would not need to check each licence individually and manually.

Figure 7: Barriers to provision of electronic resources
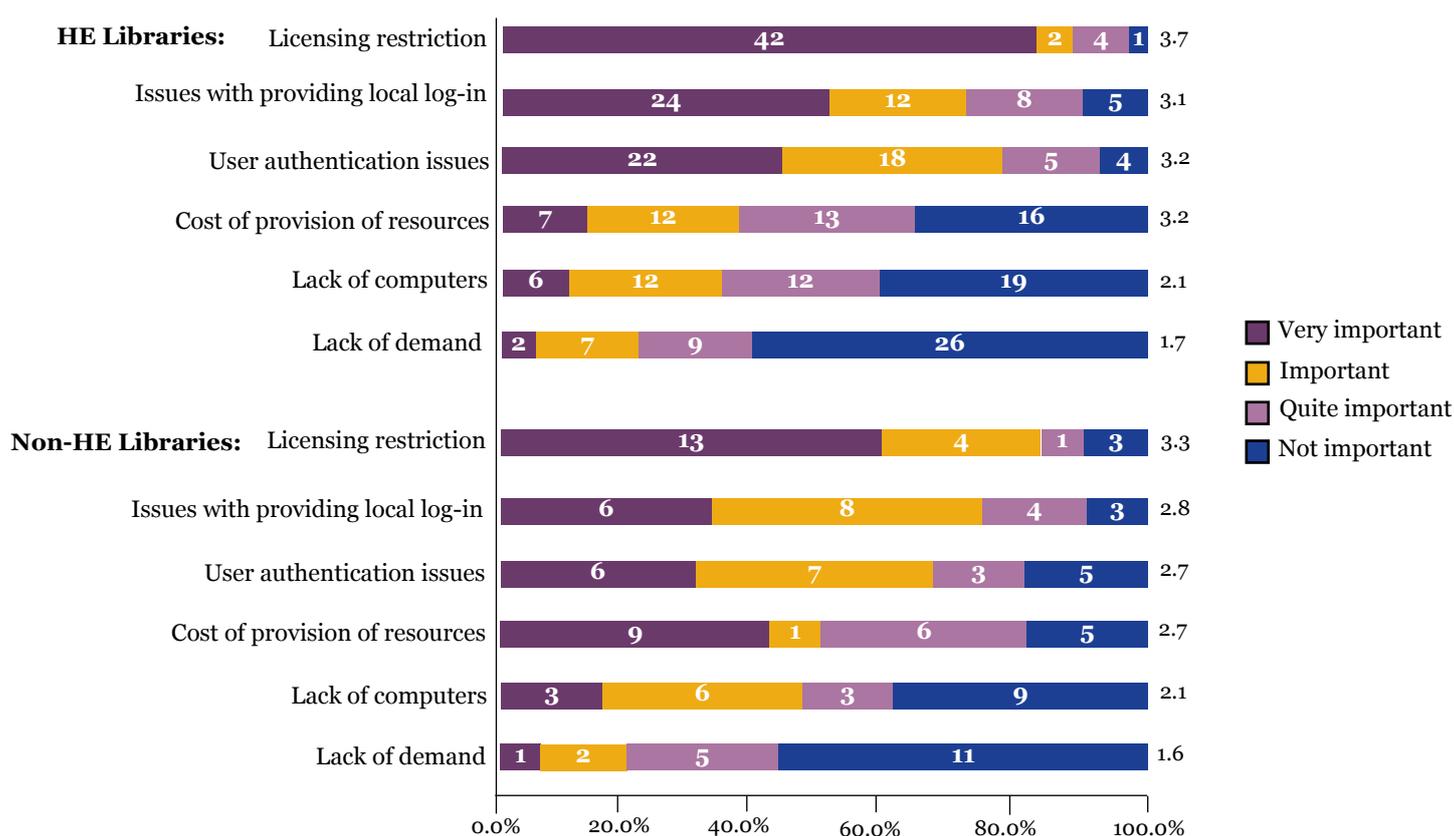
Note: Figures to the right of each bar give the average 'score' where 'very important' = 4 and 'not important' = 1

4.7. Technical issues

Librarians see the lack of suitable IT facilities and the complexity of managing different levels of access for different categories of users as a second set of major barriers to widening access to e-resources. The PFL survey suggests that only 36% of HE and 50% of non-HE libraries have the IT infrastructure in place to provide access to electronic resources to visiting researchers where licences allow. Research-intensive institutions are more likely than smaller and newer institutions to have the necessary infrastructure in place. The majority of institutions (62%) have defined policies for handling requests for access to e-resources from visiting researchers, but most deny access to any type of visitor. Providing local log ins and user authentication are particular problems in both HE and non HE libraries (see figure 7).

The solutions to these problems are not technically difficult and, as we have already noted, some institutions have already put the necessary arrangements in place. But as one interviewee said, "...the biggest hold up in HE is that visitor access is not a priority for IT departments, who do not see this as part of their remit". Devoting resources to setting up the necessary protocols and firewalls in order to provide access to visitors is not high on some institutions' priority lists: it is 'difficult to sell', because it benefits external users more than an institution's own researchers.

5. Non-cost barriers to research information

Some of the barriers that researchers face in gaining access to information relevant to their work have nothing to do with libraries or the restrictions of licences. Rather, they are to do with restrictions imposed by a range of bodies in the public and private sectors who hold information that researchers may wish to study in the course of their work.

The NCB study investigated some of these problems which can arise for a number of reasons:

• intellectual property restrictions, especially those associated with copyright and so-called 'orphan works'

• information held by public bodies that is not yet available under the terms of the Public Records Acts or the Freedom of Information Act

• information held by corporate bodies that may be sensitive for commercial or other reasons;

• information about individuals that may be subject to privacy restrictions

• problems associated with digitisation or inadequate cataloguing, and

• data that is locked up in formats that make them difficult to use.

The range of issues raised in the study is vast, and specific problems may affect only a limited group of researchers. But for those groups, the problems can arise repeatedly, are difficult to resolve, and can have a major impact on their work: over a quarter of those who responded to the NCB survey had had to abandon at least some elements of their research. Many researchers encounter a tension between the gathering of data and information and the pursuit of research as public goods on the one hand; and an imperative to exploit intellectual property and maximise financial returns on investment on the other. This tension affects both universities and a number of public bodies that could play a more supportive role in making data and other information more readily available to the UK research community.

For researchers in many areas of the life sciences, chemistry, environmental sciences and computer science, the key problems are associated with access to information held by commercial and other organisations. Such information may not be made available

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for several reasons, most commonly to do with commercial sensitivities, sometimes associated with universities' own desires to exploit intellectual property rights or to develop commercial partnerships. The problems seem to be particularly acute in earth and environmental sciences, where gaining access to survey data held by oil, mining and other companies can prove especially difficult. At a recent Geological Society conference, several papers had to be withdrawn because companies were not willing that data should be disclosed. Similar problems can arise in undertaking research into the sustainability or environmental impact of new technologies, processes and activities. In computer science and bioinformatics, other kinds of problems can arise when data is held in proprietary formats that are not well-documented and are difficult to use, making the job of integrating data in diverse formats particularly problematic.

For researchers in the arts, humanities and social sciences, the key problems are more likely to be associated with copyright restrictions, with access to information held by public and private bodies, and with access to digitised records.

Copyright restrictions on twentieth-century works, especially those whose ownership is uncertain, cause difficulties for researchers in history, music, media and communications and other subject areas; and so do the restrictions on how digital files

can be manipulated for research purposes.

Other problems can arise, ironically, from digitisation. Some major digitisation projects have suffered from poor quality control, and information has been lost. In other cases, the business model for sustaining a digitised collection is built around charges for access to single items, which may impose a crippling burden on researchers who need to access material in bulk. Inadequate – or wholly absent – catalogues, and catalogues that are not available online, also constitute a significant barrier to access.

Finally, researchers from a range of disciplines – especially but by no means exclusively, history – express concerns about material that has not yet been made available under the 30-year rule prescribed in the Public Records Act 1967. The recent Government decision that the 30-year rule should be reduced to 20 years is welcome, as is the release of material under the terms of the Freedom of Information (FOI) Act 2000. Nevertheless, there are some concerns that officials adopt a safety-first approach to requests for information under the FOI Act which also, unnecessarily, hinders access.
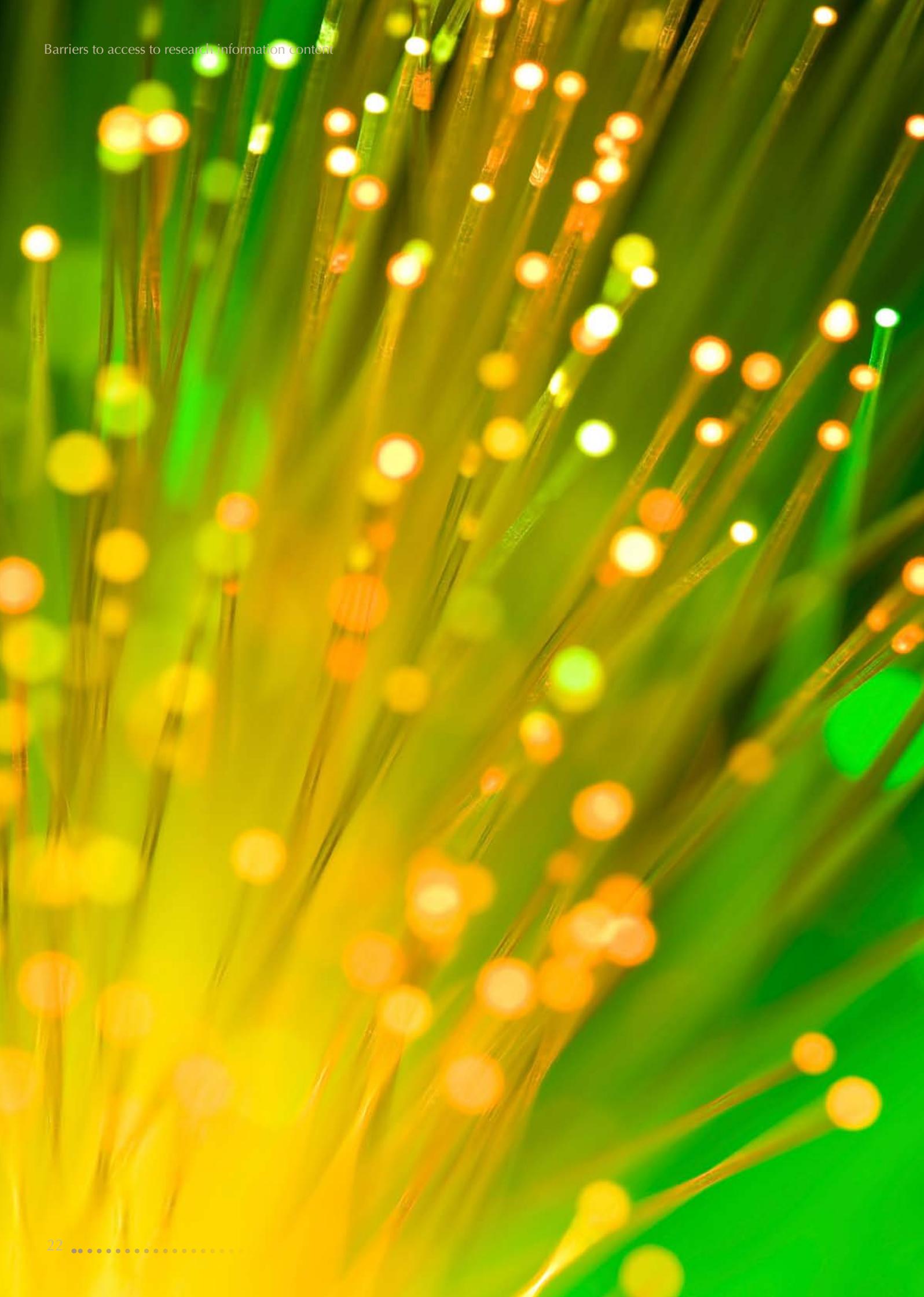
6. Conclusions and recommendations

The amount of material to which researchers have ready access on their desktops has grown enormously over the past decade. Nevertheless, no library or institution can provide access to all the resources, print and digital, that their researchers might possibly need. The evidence we have gathered shows that researchers often encounter difficulties in accessing relevant information, and that those difficulties often have a significant impact on their research.

The key reasons why researchers encounter access difficulties are:

• content has not been digitised and made available online

• institutions have not purchased print copies or acquired a licence for online access to content that researchers need, and that they find through a wide range of discovery services

• discovery services themselves are often complex, and not well-integrated with library systems

• licences for online content are seen as complex and sometimes restrictive of access for non-members of institutions

• institutions lack the technical or administrative capacity to make online licensed resources available to non-members, and

• restrictions on access are sometimes imposed by organisations and individuals outside the HE sector who hold information resources that researchers wish to study in the course of their research.

There have been improvements in a number of these areas in recent years, and there are workarounds – some of dubious legality – for a number of problems. But the impact on the efficiency as well as the quality of research, across the HE sector and beyond, is real. Researchers fear for the credibility of their work; and on occasion, the difficulties lead them to abandon at least some aspects of their research.

It is possible that new developments in the research information landscape over the next few years such as e-books and moves towards open access will alleviate at least some of the problems

we have identified. It is notable, however, that these new developments featured relatively little in the surveys and discussions reported on here. This suggests that they have not yet reached a scale to provide practical solutions to many of the problems researchers encounter. Many researchers and librarians also fear that at least in the short term, until licensing and technical issues have been resolved, the moves towards a digital environment may impose new barriers, as researchers face restrictions on access to resources which would formerly have been available to them in print.

The issues, and the relationships between them, are thus not straightforward. But the key message from this report is that they must be addressed if the UK research community is to operate effectively, producing high-quality research that has a wider social and economic impact. This means getting HE institutions, librarians, publishers, funders and government to work together to reduce the barriers to accessing research information content. Some suggestions are made in the recommendations below.

6.1. Licences for access to e-content

Increases in the availability of e-content in general and e-journals in particular have been very much welcomed by researchers. They have also changed expectations. So it is not surprising that when many researchers are regularly unable to gain access via their own institution to specific items of content they need, they express

'The key message from this report is that access to research information content issues must be addressed if the UK research community is to operate effectively, producing high-quality research that has a wider social and economic impact.'

dissatisfaction with the constraints imposed by current licensing arrangements.

Open access content may become increasingly important as a means of overcoming researchers' current frustrations, but it is not available in sufficient volume as yet, and licensed content will remain a key part of the landscape for the foreseeable future. In the meantime, researchers adopt a number of expedients, including document supply services but also other methods of dubious legality, to gain access to content not licensed by their own library. Many librarians point to the potential of collaborative licensing arrangements, as pioneered in Scotland through the Scottish Higher Education Digital Library (SHEDL) initiative, as a means of widening access to licensed content across the whole HE sector.

Recommendations:

- **The RIN, JISC, SCONUL and others should do further work on the nature and scale of the access problems faced by researchers and the costs associated with overcoming those problems.**

- **The RIN, JISC and SCONUL should examine the Scottish experience of collaborative acquisition, with a view to extending this across the UK if appropriate.**

- **Publishers should build on the open access business models being developed and consider more innovative licensing models that address researchers' and librarians' concerns about current restrictions (such as the level of charges for pay-per-view access to content)**

6.2. Discovery and access

The complexity of the relationships and interfaces between search and navigation services including generic and specialised discovery tools, publisher platforms and library systems raise a number of difficulties for both researchers and librarians. Libraries need to work with researchers to improve their understanding of these services and tools, and the interfaces between them, but also to seek to make them simpler to use. JISC and SCONUL have commissioned work on the feasibility of common library management systems and catalogues, and a further report is due in late 2009.

In view of the evident importance of the various generic and specialist discovery services that most researchers use, a key aim should be to ensure that in all cases researchers can gain appropriate access to licensed content direct from such services. Similarly, libraries need to ensure that when they cannot provide access to content directly themselves, they have efficient, effective and user-friendly systems to allow researchers to gain access from other sources, via interlibrary loan (ILL), document supply (DS) or other services.

Recommendations:

- **JISC, SCONUL, RLUK and others should promote and support work to eliminate library cataloguing backlogs and ensure all remaining card catalogues are converted to an online format.**

- **Libraries should ensure there is comprehensive coverage of their holdings online, via electronic catalogues and discovery services.**

- **Libraries and institutions should seek to relax as far as possible the financial and administrative barriers when they cannot provide content from their own holdings.**

- **Institutions and libraries should provide training and guidance for researchers on resource discovery and access, and increase awareness of the full range of services they provide. This should be done in collaboration with researchers, to ensure their behaviours and needs are taken into**

account when designing services and resources.

- **JISC and SCONUL should continue their work on a UK-wide procurement of a common library management system and discovery tools.**

6.3. Libraries and external researchers

Many researchers frequently work away from their home base in the course of their research, and some, especially in the arts, humanities and social science, make special visits to other libraries to gain access to books and other printed material that is not available in their own library. Our findings show that visits to other libraries remain a regular feature of the working lives of many researchers. Librarians generally welcome such visits, and researchers' experiences of working in other libraries are generally positive. Nevertheless, libraries face a number of challenges in meeting researchers' growing expectation that both the print and the e-resources of the HE library sector as a whole should be available to them, whatever their home institution might be. For access to e-content, both librarians and researchers are frustrated by the variety and complexity of licence terms, which they see – although many publishers disagree – as restricting access for non-members of institutions.

Our findings confirm that the SCONUL Access scheme has become the predominant reciprocal access scheme, but that only a minority of researchers have become members. This may simply reflect the levels of need, but libraries should make sure that the relevant information is promoted effectively. Beyond this, many researchers wish to see a national library membership card that gives them access and borrowing rights at all HE institutions in the UK, with the home institution as the guarantor. They also want such a card to give access to a nationally agreed minimum set of local IT resources and link back to home information resources for printing and downloading.

Recommendations:

- **With the help of SCONUL and RLUK, institutions and libraries should extend their efforts to make researchers aware of the content and services they can access in other libraries, by providing comprehensive and accessible information and support for researchers visiting from other institutions.**

- **Institutions and libraries should promote the SCONUL Access scheme to their researchers, particularly by ensuring that information on the scheme is available on library websites.**

- **SCONUL should continue work to enable researchers and libraries to manage their online membership of the SCONUL Access scheme.**

- **The RIN, SCONUL and others should examine the feasibility of a UK-wide higher education library membership card to enable access to for all researchers at UK higher education institutions.**

- **The JISC Registry of Electronic Licences (RELI) project to establish a central database of licensing terms for librarians and others to use should continue be supported and developed.**

- **Publishers should standardise their terms and conditions and ensure the terminology within them is clearer and easier to understand.**

6.4. Technical issues

Only a minority of HE institutions currently have in place the IT and related infrastructure to enable them to provide access for non-members to e-content, even when licence terms allow. Devoting resources to setting up the necessary protocols and firewalls in order to provide access to visitors is not high on some institutions' priority lists, and relatively few of them have

implemented the recommendations of the HAERVI Report and Toolkit. Many publishers suggest that many of the problems in access for non-members are attributable to institutions not having the administrative capacity or technical systems fully to exploit the terms of their existing licenses. Libraries cannot solve all the technical problems themselves, and need the co-operation of their IT services.

Recommendations:

- Librarians, IT services and institutional managers should implement HAERVI (HE Access to e-Resources in Visited Institutions) report and toolkit to provide effective services and access to electronic content for external researchers.

- SCONUL, UCISA and others should continue their joint programme of work on simplifying arrangements for access to electronic content for external researchers.

6.5. Non-cost or licensing barriers

There is a considerable range of problems that researchers may face in gaining access to information relevant to their work which have nothing to do with libraries or the restrictions of licences. Rather, these are to do with restrictions imposed by a range of bodies in the public and private sectors who hold information that researchers may wish to study in the course of their work. Copyright restrictions, including those relating to 'orphan works', and the limitations of the fair dealing exceptions, remain important barriers for many researchers in the arts, humanities and social sciences in particular; and there are concerns about moves to strengthen some of these restrictions.

Other restrictions relate to commercial and other sensitivities, or to the costs associated with access to the contents created in some large digitisation projects. Many researchers encounter a tension – affecting universities themselves as well as a number of public bodies – between the gathering of data and information, and

the pursuit of research, as public goods on the one hand; and an imperative to exploit intellectual property and maximise financial returns on investment on the other. Researchers would welcome more support, and training, from their institutions in seeking to resolve the problems that arise from these tensions.

Recommendations:

- The RLUK, SCONUL, UUK and others should keep a close watch on developments in the intellectual property regime, to ensure that the interests of researchers are taken into account.

- The RIN, working with others, should sustain efforts to ensure researchers are well informed about access to public sector information, including the Public Records Act, the Freedom of Information Act and the work of the Office for Public Sector Information.

- The RIN should support organisations seeking to ensure that information and datasets created with public funding are accessible to researchers.

References and useful links

References

Research Information Network (2006). Researchers and discovery services: behaviour, perceptions and needs.
www.rin.ac.uk/researchers-discovery-services

RIN/CURL (2007). Researchers' use of academic libraries and their services. A report commissioned by the Research Information Network and the Consortium of Research Libraries. www.rin.ac.uk/researchers-use-libraries

UCISA (2006). HAERVI: HE access to e-resources in visited institutions.
www.ucisa.ac.uk/publications/~/media/Files/members/activities/haervi/haerviguide%20pdf.ashx

Useful links

British Library help for researchers www.bl.uk/reshelp/index.html

British Library Research Services www.bl.uk/research

Inspire www.inspire2.org.uk

JANET www.ja.net

Joint Guidelines on Copyright and Academic Research Guidelines for researchers and publishers in the Humanities and Social Sciences. Publishers Association and the British Academy (2008)
www.publishers.org.uk/en/home/copyright/copyright_guidelines/joint_guidelines.cfm

JISC Collections guide to model licenses www.jisc-collections.ac.uk/model_licence/coll_guide_jiscmodel

JISC Collections additional authorised user license initiative
www.jisc-collections.ac.uk/about_collections/publisher_information/aau_initiative.aspx

JISC Legal http://www.jisclegal.ac.uk/Home.aspx

M25 Access and Borrowing Scheme www.inform25.ac.uk/VAL/m25scheme.html

PubMed www.ncbi.nlm.nih.gov/pubmed

Registry of Electronic Licenses (RELI) www.lboro.ac.uk/departments/dis/disresearch/RELI/ReliHome.html

Research Libraries UK (RLUK) www.rluk.ac.uk

SCONUL Access www.access.sconul.ac.uk

ScotCHEM www.scotchem.ac.uk

SCURL research extra guide http://scurl.ac.uk/accessdocs/SCURLResearchExtraGuide(2).pdf

SHERPA www.sherpa.ac.uk

Web of Science http://wok.mimas.ac.uk

UK PubMed Central http://ukpmc.ac.uk

Universities UK (UUK) www.universitiesuk.ac.uk

All links accessed 9 November 2009

About the Research Information Network

Who we are

The Research Information Network focuses on understanding and promoting the information needs of researchers. We produce evidence-based research into information and data issues that affect researchers and information management professionals.

What we work on

We provide policy, guidance and support, focusing on the current environment in information research and looking at future trends. Our work focuses on five key themes: **search and discovery, access and use of information services, scholarly communications, digital content and e-research, collaborative collection management and storage.**

How we communicate

As an independent voice, we can create debates that lead to real change. We use our reports and other publications, events and workshops, blogs, networks and the media to communicate our ideas. All our **publications** can be downloaded free from our website at **www.rin.ac.uk**

This report is available at **www.rin.ac.uk/barriers-access** along with the supporting studies. Hard copies can be ordered via email **contact@rin.ac.uk**

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