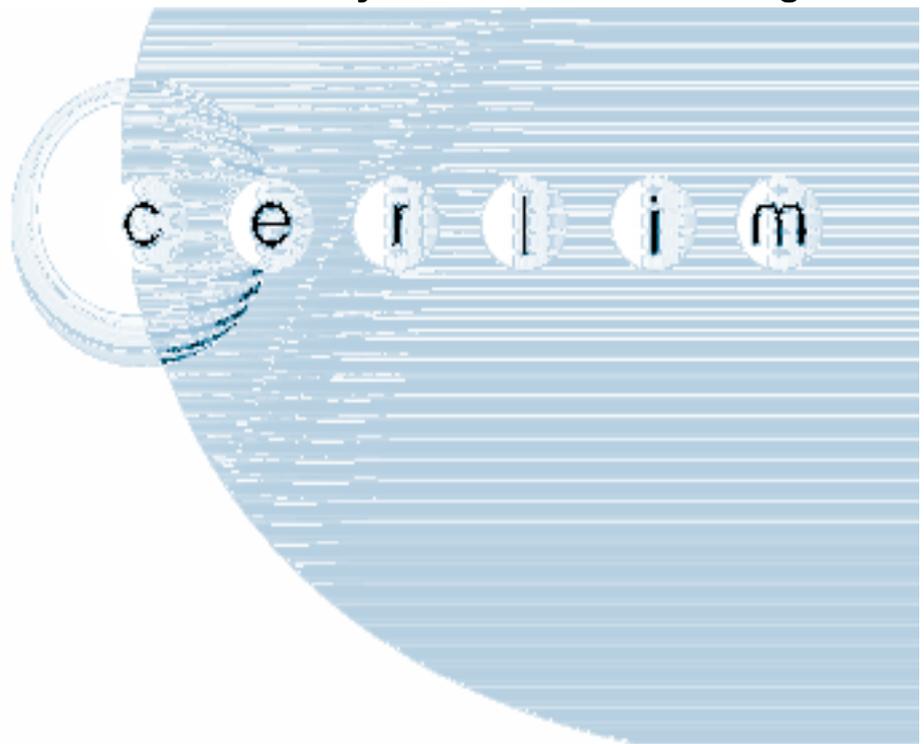**Centre for Research in Library and Information Management**

SHERPA Project Evaluation
Final Report
July 2005

Margaret Markland and Peter Brophy

The SHERPA Project Evaluation

The SHERPA Project Evaluation was a one-year project commissioned by the SHERPA Project Management Team and undertaken by the Centre for Research in Library and Information Management (CERLIM) at the Manchester Metropolitan University.

The CERLIM Evaluation website is at http://www.cerlim.ac.uk/projects/sherpa/

The SHERPA website is at http://www.sherpa.ac.uk/

Enquiries

Further enquiries about this Evaluation should be addressed to
Peter Brophy, Director of CERLIM p.brophy@mmu.ac.uk
Margaret Markland, Research Associate, CERLIM m.markland@mmu.ac.uk

Acknowledgements

This document should be cited as:

Markland, M. and Brophy, P (2005) SHERPA Project Evaluation, Final Report. Manchester: CERLIM (Centre for Research in Library & Information Management).

Contents

Executive Summary

The collective achievements of the SHERPA Development Partners and Associate Partners have been considerable. When it ends in October 2005 the project will be able to show that it was possible for research-led universities and the British Library to develop and promote OAI-PMH compliant eprint repositories using open source software, and to populate them with their research outputs and associated metadata.

The type of content deposited in the repositories varies across the partner institutions, but broadly speaking the 'research outputs' include refereed or unrefereed preprints of journal articles, peer reviewed postprints which may be the full text as published, the author's final version of the published text, a reconstruction of this version, or a citation linking to the published version, they may be book chapters, conference proceedings, working papers, research data or theses.

A body of knowledge and experience has been accumulated upon which the wider community can draw, particularly covering issues such as the setting up, managing, populating and maintaining of institutional repositories. Advocacy strategies which work have been developed, and are supported by presentation and other publicity materials which are well documented and disseminated in a variety of forms for reuse by others in the community.

A clearer understanding has been gained of how to approach, persuade and motivate different stakeholder groups (institutional managers, academics, librarians) to support the development of an institutional repository and encourage deposit in it. The importance of using language which speaks to the stakeholder group, and avoiding 'project jargon' has been recognised.

The practicalities and processes of scholarly and research communication and publication, of copyright law, and of the relationship between academic authors and their publishers are now better understood, but have proved complex and sometimes problematic. SHERPA has been hampered by ambiguous messages and a lack of clear policy on the part of some publishers regarding the deposit of copies of published articles in repositories. Some publishers remain wary as they try to assess the impact which deposit might have upon their customer base. Academics hold misconceptions about the purpose of eprint repositories and the differences between 'deposit' and 'publication'. They are concerned about how their publications are

presented in the repository, how they will be cited, versioning problems and duplication of effort. They may not have an 'author's final copy' of their publications to deposit. At this stage, they appear to conceive of their institutional repository as a 'stand-alone' place to deposit their scholarly publications rather than as part of a networked international resource where they might easily find other research content. They are less keen to 'self-deposit' than was envisaged, certainly without a mediated service to check their existing copyright agreements with publishers. They may lack legal knowledge and do not want to or have time to acquire it. Above all they are cautious about damaging their highly valued established relationships with scholarly publishers, which may be more important to them than their own rights as authors.

At a local level, the transition from project to institutional system, the 'fit' with other institutional systems and long-term curation policies remain to be worked through. Again, these are issues which will impact upon future repository development across the wider community.

SHERPA has met with much success within project partner institutions, but for the broader vision of a research landscape which encompasses a network of integrated interoperable institutional eprint repositories throughout the HE and FE communities and the British Library to be realised, certain other operational issues will need to be addressed in the long term. For example, agreement will be needed on high quality descriptive metadata standards and upon how to handle duplication of content across repositories if cross-institutional disclosure and retrieval are to be successful. Set-up and maintenance costs will need to be clearly indicated so that potential repository developers can weigh these costs against the benefits of their investment. Long term staffing and support needs will need to be quantified.

SHERPA has benefited from a core of enthusiastic and committed project teams and has provided a model example of collaborative working and mutual support, both among project partners and out into the wider HE community. It has established a range of eprint repositories across both small and large individual institutions, and a consortium of three universities. These provide successful working examples of different repository models for other institutions to follow. In a short time SHERPA has built up a respected profile within the international Open Access movement, with the UK Government and with UK and international research communities and funding providers. Above all, SHERPA has laid much good groundwork for the successful future expansion of institutional repositories across UK research institutions.

The SHERPA Project Evaluation

1. Introduction

An external evaluation of the SHERPA project was carried out by CERLIM between August 2004 and July 2005. Work was undertaken to a flexible timetable, to allow periods of intensive activity at appropriate stages and a lesser degree of involvement at other times. However, a 'watching brief' was kept on the SHERPA project throughout the year, so that as far as possible the evaluators remained aware of major developments within the project, and also within the rapidly developing wider environment within which SHERPA operates. It has indeed been a most interesting and rewarding experience working with SHERPA at a time when institutional eprint repositories are being established in UK universities and the British Library, and when the Open Access movement is so rapidly gaining a confident voice.

In brief, the aim of the SHERPA project, as described on the JISC website[1] was to *"develop and promote an environment in which the research output from several of the UK's largest research-led institutions is freely available on OAI-PMH-compliant e-print institutional repositories to the rest of the HE and FE community and beyond."* Furthermore, repository models were to be tested *"including single-institution repositories"* and *"the model where several institutions share a single server".* The British Library was to *"establish a server to host papers produced by 'non-affiliated' researchers (those using the BL and others working in research institutes or independently)."*   Alongside this core of Development Partner institutions, seven additional partners were to join as Associate Partners, to test out *"enlargement models"* supported by the experiences of the Development Partners.

Within this context, this evaluation was commissioned by the SHERPA Management Team. An evaluation plan was agreed at an early stage, and was further discussed in detail with Bill Hubbard the SHERPA Project Manager before work began. It was agreed that the focus should be upon the relationship between repository developers and their end-users. This was not therefore a technical evaluation, nor was it summative, that is it did not explore whether or not all project and programme aims and objectives had been met. Instead the evaluation sought to increase understanding of the cultures in which institutional repositories can flourish and those

---

[1] http://www.jisc.ac.uk/index.cfm?name=project_sherpa

criteria necessary for successful deployment of repository services. It hoped to highlight what SHERPA had achieved since its inception, what strategies for populating repositories the Project Officers had found to work particularly well, what unexpected issues had arisen and how these had been dealt with, and how Project Officers had responded to the changing national and international environment within which institutional repositories currently operate. It therefore relied upon liaison with and the co-operation of repository managers and their teams, which (with a few exceptions) was very willingly given.

During the lifetime of the evaluation, the repositories have developed to different degrees of maturity and according to different models. It has clearly been shown that given a committed and enthusiastic project team, supported by institutional backing at a high level, sufficient funding and effective population and advocacy strategies, repositories can be successfully established using open source software, and a considerable body of content can be collected. The Oxford Library eprints service, for example shows content across a range of subject disciplines, as does Glasgow eprints service, which complements the DSpace service at the same institution.   The White Rose repository has provided a successful working model of a consortium approach across three research universities, supported by a dedicated Projects Officer. Other repositories such as the SOAS Library Eprints Repository show that smaller institutions serving less mainstream subject areas can also build a useful body of content.

Much more has been achieved than just a range of populated repositories. SHERPA offers a considerable body of advice on the practicalities of repository development. Work has been done by Project Officers to clarify the intricate details of copyright law and the nuances of publishers' agreements, which will help and inform the wider community. Their advocacy activities targeted at different stakeholder groups will provide instances of good practice which others can build upon. SHERPA has taken place against a background of environmental change and uncertainty, and in an arena which was at once local to the institution and the project, but also contributed to discussion at national government level and with national and international colleagues in education, research and business. The tangible legacy of SHERPA reports, publications and project documentation is supplemented by a considerable established network of links with international projects and key players in the Open Access movement. All of this will be of value to future repository development in the UK.

2. Aim and objectives

A primary aim of this evaluation was to explore the engagement of end users (i.e. the authors of papers) with institutional repositories, within the broad SHERPA consortium. It was hoped to shed light on the decision-making processes of users, and on what would persuade them to deposit or prevented them from doing so. This depended upon interactions between two key stakeholder groups; project partners with their practical experiences of developing and populating repositories through their various advocacy strategies, and users with their various perceptions of how open access might impact upon their scholarly communication processes and their motivations to deposit in the repositories.

In order to achieve this aim it was hoped to identify a range of users with different characteristics in different institutions. These were
- "the converts" – committed depositors with several papers already placed in their institutional repository or who had taken an 'enthusiast' stance to the concept and had deposited all their available papers to date
- "the cautious" – who appeared interested but had only deposited a single paper, or had made perhaps just a verbal commitment to deposit their next available paper
- "the cynics" – those who were unwilling to deposit

It was decided not to sample end users who were unaware of the concept of eprint repositories, since time would be needed to explain it to them and they would be unlikely to be able to form considered answers to our questions.

The specific objectives of the evaluation were:
- to understand the key issues which impact upon the development of open access institutional repositories in the UK Higher Education environment
- To collect data on the experience of end users when using such repositories.
- To clarify what motivates the decision whether or not to deposit
- To review advocacy initiatives and strategies with a view to providing guidance to future institutional repository initiatives

3. Methods

In order to achieve these objectives a six-stage process was carried out.

Stage 1. – (by Christmas 2004) Visits were made to a sample of Project Officers at Nottingham, Leeds, SOAS and UCL. These provided background information and initial understanding. The British Library was also visited at a later stage.

Stage 2. – (by Christmas 2004) An online questionnaire was developed by the evaluators and the SHERPA Project Manager, and was circulated to Project Officers (both Development Partners and Associate Partners). This asked them to

- Clarify the principal difficulties which they had encountered when setting up and populating their repositories
- Comment upon how academics were responding to their repository
- Describe any key issues arising from their work
- Consider what useful outputs SHERPA might have for the wider community

Stage 3 – (January / February 2005) An online questionnaire was circulated to academics at SHERPA Partner institutions.   Project Officers were asked to disseminate it (i.e. its URL) to academics in their institution who had either deposited in their repository, expressed a definite intention to do so, or had voiced concerns and not deposited.   The questionnaire broadly explored the user's motivation to deposit (or not), why they only deposited once if applicable, and their experience of and satisfaction with the process. Academics were asked to identify their subject area, and also to provide contact details if they were willing to take part in a follow up interview. Otherwise the responses were anonymous. All responses were returned to CERLIM for analysis. The questionnaire remained open until the end of May.

Stage 4 - (March to May 2005) Interviews were undertaken with selected academics who were identified from the Stage 3 questionnaire.   The interviews briefly explored the subjects' awareness of repositories in general i.e. the concept itself, their opinions of their own institutional repository at both a general level, and at the more detailed level of how to use it. Those who had attempted (successfully or not) to use their own institutional repository were asked why they chose to deposit, how easy or difficult they had found the deposit process, why they had only deposited once (if applicable), and to explain any concerns they had and whether these were met.

Interviewees were also asked where else (apart from journals) they deposited or 'published' their papers and whether they perceived any differences between this and deposit in an institutional repository. Unsuccessful use was explored including the user's perceptions of why this occurred. Users were asked what, in their view, was needed (and where they thought the locus of responsibility for action should be) to make institutional repositories a success.

Stage 5. – (April to June 2005) Review of advocacy activities

Project Officers were asked to provide CERLIM with a description of their advocacy activities, and their assessment of how successful or otherwise these had been. The purpose of this activity was to provide other institutions who may be thinking of setting up an institutional repository in the future with the collective advocacy experiences of the SHERPA projects, and valuable guidance on successful activities and strategies.

Stage 6. (End July 2005)
The final activity was dissemination of the Evaluation findings to the SHERPA Project Director and Project Manager, through this report.

All of this work was underpinned by a considerable amount of continuous environmental scanning. This included
- monitoring recent publication in academic journals and elsewhere
- participating in the SHERPA project list
- monitoring discussion on the American Scientist Open Access Forum and similar lists
- attendance at the BOAI Conference in Southampton in February 2005
- attendance at the SHERPA Project meeting in Leeds in April 2005
- attendance at the London Leap Field Officers' meeting in London in May
- email liaison with individual Project Manager and Project Officers

4. Findings of the Evaluation.

Introduction

Section 4.1 of the Findings reports the views and experiences of SHERPA project staff about the process of setting up and maintaining the repositories. These were gathered from three sources

- visits to project staff in Nottingham, Leeds, SOAS, UCL and the British Library
- the questionnaire circulated to all Project Officers in November 2004
- subsequent ongoing discussions on the SHERPA list, as an invitee to various project meetings, and through email correspondence with individual project staff

Section 4.2 reports on the advocacy activities undertaken by SHERPA Project Officers. This information is collated from

- the questionnaire circulated to Project Officers in November 2004
- the review of advocacy activities carried out between April and June 2005
- ongoing informal discussion as above

Section 4.3 considers further issues which are impacting upon repository development.

Section 4.4 reports our work with academics and is gathered from the questionnaire circulated through the intermediation of Project Officers early in 2004, and subsequent follow up of academic staff.

4.1 The views and experiences of SHERPA Project Officers

In the questionnaire, Project Officers were asked to comment upon their experiences of setting up the repositories. These are the key points they made, with their actual comments in quotes.

Technical advice and support needs when setting up the repositories

"Once up and running, the system is not that complex, but anyone creating a repository from scratch shouldn't underestimate the support needed to iron out any initial technical difficulties and for initial customization."

There were very mixed messages regarding the degree of ease or difficulty of the set-up process. In contrast to apparent "*'received wisdom' that repositories are easy to set up"*, only five of the fourteen respondents reported that the initial process was easy or fairly easy. The consensus was that it had been more difficult, complex and time-consuming than expected. This is true regardless of whether developers were using DSpace or eprints.org software.

Most of the projects report that they required technical help and support when setting up their repositories. Project Officers faced various difficulties including:-

- **Problems with initial installation and software configuration** - Project staff did not always have all the required technical skills to carry this out easily. They had either to acquire these, which was a time-consuming process, or ask for help from staff not directly involved in the IR project. IT Systems staff (i.e. belonging to the institution's IT departments, but not directly employed as project staff) were sometimes reluctant to commit to the project. Those who made the most positive comments seem to have been well supported by their in-house IT service, but there are a few, particularly those in small institutions, who found it difficult to get the level of help and support they needed. These in particular benefited from networking with other projects and "*the eprints community"* and drew upon their pool of experience and expertise. There is clear evidence of cross-project collaboration, and partners with greater technical skills at their disposal were generous with their support where it was requested.

It is worth noting however, that one Project Officer said *"on balance I would have preferred a subscription model with a helpdesk, or guaranteed support"*, and this need may be reflected elsewhere if the development of IRs in the wider community becomes more common.

- **Problems with customizing the interface** - Sometimes the problems seemed to lie less with basic software and hardware installation than with modification and customization to local requirements. Once installed, a considerable amount of 'local adaptation' to the eprints.org software in particular was needed, and this is reported as being *"very, very time-consuming",* and difficult for some. For example, the need for non-standard fonts to accommodate different scripts proved problematic. Again, this was a particular problem where there was no 'in house' IT expertise or web officer to call upon, and responsibility for customizing the interface rested with Library staff. In this situation, as before, help was sought beyond the institution, from a variety of sources including SHERPA project staff in other institutions, through various mailing lists (SHERPA, eprints.org and DSpace in particular), and from commercial vendors' publicity materials, help services and technical documents.   Some took the opportunity to improve their skills. *"Our Web / Systems team do not have the resources to manage this on an ongoing basis, so some training of Library staff was required."*

- **Problems with technical information resources** - The eprints.org handbook was considered too technical for the less technical user, and not sufficiently comprehensive to answer many questions. The eprints.org software was not sufficiently flexible to meet users' needs. For example it is reported that it cannot support characters other than plain ASCII, which had led to *"the chagrin of one of my contributors who cannot have her own name spelt out properly*.

The experiences of the SHERPA community have shown that the successful initial set up of an Institutional Repository requires a mixture of library and IT skills, and that these were not always in place in individual projects.   Fortunately the SHERPA Project Manager very successfully cultivated cross-project support from a core of project staff who were willing to share their experiences and to help other partners.

We found evidence during the course of the evaluation of a similar pattern of need among librarians in other Universities who were just beginning to develop

repositories, some of whom were urgently seeking information, advice and support. A useful output of the SHERPA project for the wider UK HE community, where developers might be rather more isolated, would be a realistic assessment of the skillset needed to set up a repository, and pointers towards where help and support can be obtained.

Anticipated ongoing administrative and technical support needs

"we are understaffed in this area generally at the moment, so the project officer has to do more"

At the development stage, administrative support for the repositories largely seems to have fallen upon the shoulders of Project Officers, though a few institutions have employed administrative assistants to help with the workload.

Project Officers gave clear indications of the types of both administrative and technical support needed, namely continuing effort across a range of skills and tasks to cover

- technical maintenance of the repository, including software updating and bulk uploading of papers
- legal matters such as understanding publishers' copyright agreements and checking compliance; helping academics to understand their rights as authors and to comply with legal issues
- obtaining permission from academics to use their publications, ensuring that the correct version of a paper is obtained and converting it to pdf where necessary; ensuring that any additional copyright permissions are obtained for images and multimedia files which are an integral part of the publication
- cataloguing and metadata management, including where responsibility should lie for data entry and checking to ensure quality control, and also the ongoing development of terminologies
- advocacy efforts, including contacting and supporting academics, enabling mediated deposit etc.

One Project Officer had thought through in detail how the repository might develop, and saw support level needs as depending upon the model adopted for the repository, which in turn depended upon factors in the external environment which are as yet unclear. She said:-

"I could see a model whereby the majority of support is provided from within existing library resources (for example, by incorporating the administrative support into the roles of subject librarians and/or collection management staff). However, at the moment, we are anticipating the need for a full-time, dedicated member of staff to oversee the administration of the system. (Of course, this represents support for three institutions covering several thousand academic staff). Again, the answer to your question depends on the model adopted - whether, for example, records to the repository are uploaded by individual academics or departmental administrators or whether the library retains a central role in upload. It will also depend on where the onus for copyright checking lies - is it with the academic or with the library. It will also depend on what happens externally - e.g. whether the copyright position becomes more straightforward; whether there is a move towards mandating open-access deposit (and therefore, probably, less need for active advocacy). The amount of technical support is, again, difficult to predict - it will depend how much you want to keep your repository ticking over or how much you want to actively develop it to interface with other University systems, for example."

There were different opinions on what level of support would be needed beyond the project end, (and perhaps it is as yet too early to quantify this, particularly for Associate Partners), but some suggested a minimum of 0.2FTE, while others foresee a FTE post being needed for a completely mediated service.

Set up and on-going maintenance costs

"Not known"

Few partners were able to estimate the cost of their repository, whether set up costs or running costs once the repository is established. Those who did so suggested perhaps £18k overall, or around £1.5k - £8k plus the ongoing personnel cost, which might include the creation of new posts or changing job roles.   Again there was a feeling that there were too many 'unknowns' to give a definitive answer, particularly when looking to the future. *"It will depend on the quality of the data entry of academics (i.e. the need for checking and maybe re-entry of data by library staff), whether or not we decide to deposit files on behalf of academics, whether or not we decide to play a proactive role in the identification of potential OA articles to be included in the repository. …. All the work so far is in addition to existing workloads."*

There was a marked difference between comments made on costs by projects who had received larger and smaller amounts of funding. The latter often reported that lack of money was most definitely impeding progress with the population of the repository. *"We need more money for advocacy; one to one is all we can manage"*. *"I've not got the money to stage a launch event"* and *"We desperately need a clerical assistant dedicated to the repository – at least in the short term."*

If SHERPA partners are better able to quantify the true cost of setting up and running a repository, especially using different software, staffing and deposit models, this would be most useful information for the HE community. 'How much will it cost?' is likely to be one of the first questions asked by university managers.

Long term sustainability

While most issues surrounding the immediate set-up and population of the repositories are being addressed, there is some concern about the future. Recognizing the difference between setting up a repository for a funded project and doing so as a long-term institutional resource, Project Officers noted certain administrative and support issues as being critical to success. These included

- the need for institutional policy regarding the model, nature and scope of the repository, who should manage it, arrangements for deposit, types of content, requirements for licenses and crucially of course, how it should be funded. At the time of writing continued institutional funding beyond the end of the SHERPA project is not guaranteed for all partners.
- policy on the circumstances in which materials might be removed from the repository, whether the academic author should be able to request this, and what should happen when an academic moves to another institution
- addressing curation and preservation issues, which although not the first priority of SHERPA projects, are acknowledged to be essential to the success of a permanent institutional repository, a   nd which may involve considerable IT input and cost in the event of software upgrades and data migration
- submission of repository content to search engines, harvesters and providers of similar services will need to be monitored to ensure that these are indeed picking up the repository resources and displaying it correctly

- concerns about how future changes in the attitudes of publishers towards deposit might impact upon existing repository content; (i.e. particularly if they withdraw a prior agreement to permit deposit)
- maintaining and expanding the RoMEO database beyond the project end; experiences in the past months have shown that this cannot be considered a static resource, but will need ongoing management and frequent review if it is to remain current

Several partners seem uncertain that the cultural change required to ensure the longevity of the repository can be achieved quickly. Particular questions raised were:-

- whether the move to true self-archiving is realistic given that this would require time, effort and buy-in on the part of academics, or whether a mediated deposit system will be needed, and the implications that this would have for the workloads of library staff
- whether Universities will be willing to mandate content deposit; whether imposing such a mandate upon academics in institutions with different cultural infrastructures, management styles and traditions is feasible
- whether Universities will see the repository as an inward-facing resource for the benefit of university staff, with some value as a marketing tool, or, more in the spirit of the SHERPA project, as participant in a much wider open access movement which aims to facilitate access to research outputs
- how the repository will 'fit' with other established institutional initiatives such as institutional portals, or national processes such as the RAE. In particular, whether it will support these, or lead to duplication of effort.

The consensus seems to be that long-term success will rely upon the active participation and support of academics <u>and</u> policy makers, and that key to achieving this will be advocacy campaigns which understand the very different priorities and concerns which impact upon these key stakeholder groups. It seems to be generally agreed though, that the most effective trigger to deposit will be an institutional mandate, thereby directly affecting the academic's work processes and actions, for *"having it out of the main processes as a voluntary or optional activity just means it gets side-lined."*

4.2 Advocacy

"The biggest problem is simply the time and resource to do it effectively."

This section pulls together the responses to the Project Officers' Questionnaire and the review of advocacy activities, which was carried out later in the evaluation timetable.

Raising awareness

Once the repositories are set up, the next task has been to populate them. Project Officers were asked to reflect upon their experiences of developing and populating the repositories. When commenting upon their own role, and the activities in which they had become involved, a major task has been raising awareness. The problems encountered can be summed up as finding the time and resources (including financial resources) for a very small team with a very large audience to undertake a labour-intensive process. Furthermore, as one pointed out, raising awareness is only part of the process; the difficult part is *"turning awareness into action."*

Particular obstacles which they needed to overcome included

- the **sheer numbers of** academics and researchers who must be reached. Several talked about the "*large number of staff to get around*". *"Sometimes"* said one, *"I feel that how can one person raise awareness across a whole campus of around 2000 research staff."*
- the **low priority** which most academics give to institutional repositories. *"Staff are very busy and don't see Open Access as a top priority"* said one, but added that *"this may change if the UK Funding Councils go down the same line as the Wellcome Trust and academics have no choice but to confront the issues."* Clearly there is a perception that the status quo is unlikely to change unless there are strong environmental pressures for this to happen.
- the **lack of sufficient time** was a further factor which inhibited project staff, particularly the lack of time for small group work or one-to-one advocacy. Yet this approach was seen as crucial. One noted that *"Mass methods of raising awareness within the HE community are notoriously difficult and getting harder."* Another commented that repository advocacy initiatives were facing competition from other institutional activities, saying *"There are a number of*

> *other high-level initiatives in process in the college, so we have to compete with these / work with these"*

- the difficulty of **managing complex institutional communication routes** and structures, such as having to *"target three different institutions with differing communication routes and structures",* or a lack of appropriate meetings at which to market the repository. *"There are no meetings where large groups of academics meet regularly and where I could give a presentation if invited."* Large groups of academics do meet, of course, but these are usually cross-institutional subject group meetings, and beyond the scope of the SHERPA project teams.

All are aware, however that certain key stakeholder groups must engage with the institutional repository initiative if it is to be successful, and all have adopted a 'bottom-up and top-down' approach.

Strategies to engage key stakeholder groups

Some common useful strategies to achieve success are already apparent.

Establishing a steering group or project board can be an effective way of involving the full range of stakeholders, namely *"research, IT, library, publications, marketing, learning and teaching, academics from all faculties".* This approach has been adopted by several repository developers. Creating such a centralized group has helped raise the profile of the repository in the institution and has begun to create a culture in which the repository is 'known about' and its purpose understood, at least in pockets across the institution. This has encouraged deposit.

Presentations to University staff – an advocacy tool, which all have used continuously from the outset of their projects, and adapted to suit their audience. These are some key strategies which repository staff recommend for successful presentations.

- demonstrate the repository. This is described as *"challenging at first"* when a new repository does not have much content, but is invaluable later on, particularly once a stage is reached when the audience can be *"impressed with the quality of the content".*

- prepare the ground beforehand, particularly with committees, by ensuring if possible that at least one committee member – and preferably the Chair – is fully informed about the repository, and is supportive
- choose the weekday with the lightest teaching load when meeting academics
- time presentations over lunchtime or in the evening *"to cater for different working hours"*
- check that presentation events do not clash with other major meetings
- advertise the event by email to all staff one month beforehand, and then again seven to ten days before the event date
- advertise the event in other Faculty meetings
- choose the words used with care, particularly when advertising by email where the text in the subject field can either hook the reader in, or quickly put them off. Successful examples are *"Putting SOAS' research online; Would you like your research to have a worldwide audience?"* or *"Fancy learning about SOAS' new online research repository over a glass of wine?"*
- present the audience with facts and figures. *"generate statistics about the repository … as soon as possible and use these widely".*
- ensure that support expressed at meetings is translated into action. *"It's a good idea to have actions that you want them to agree to in the absence of any better suggestions from themselves".* This will ensure that the momentum generated at the meeting is not lost
- be prepared to answer many questions!

Repository staff advise that it is better for the presentation to be the sole focus of the meeting, rather than a 'slot on a wider committee agenda', which can either be *"useful for raising awareness, but doesn't really leave enough time to go into detail and to answer people's questions"* or tends to *"turn into much longer discussion."* They also report that as their advocacy work has progressed, there has been an encouraging movement away from them having to seek out opportunities to speak or asking to give presentations to appropriate groups, and towards an increase in invitations to speak.

Tailoring the presentation to the stakeholder

One type of advocacy presentation does not fit all. Project Officers have adapted their arguments depending on which stakeholder group they are addressing.

- **Advocacy with librarians.** This is important because of their library systems management skills, and their valuable knowledge and understanding of academic staff *"librarians know their academics and would be able to encourage them to deposit articles, or to offer a mediated service to the academics of their department."* The involvement of **subject or departmental librarians** as gatekeepers to academics and researchers has been a key strategy used by many projects. Librarians are asked *"to talk to academics and committees in their department, with input from those closely involved with the repository, if possible."* Subject or departmental librarians are ideally placed to act as advocates. They already have a route into the Departments, and they understand the many issues surrounding scholarly communication. *"Approaching departmental librarians first and ask them to contact academics or to offer a mediated deposit service is effective, since librarians on the whole are supportive about self-archiving."* , is therefore a key strategy. They are also pointing out that repositories make research literature more visible and available, and hence could provide a partial solution to the Library's problem of high journal prices and diminishing budgets.

It is reported that the reaction to the repositories from among their library communities has generally been positive. Librarians have expressed some recurring concerns however.

Firstly they are sceptical about the willingness of self-depositing academics to provide accurate high quality metadata. This scepticism is borne out to some degree by the experiences of some, but not all, Project Officers who reported that self depositors were not filling in all the required metadata fields during the deposit process, especially items such as ISSNs and abstracts. One respondent, with prior experience of RAE data collection and input envisaged *"much work involved in amending and correcting data input"* describing this as *"worrying"*, and saying that if metadata is not checked, then articles will not be found. Indeed the provision of good search tools is seen as essential by librarians. On the other hand, another Project Officer reported that metadata submitted to the repository had been of sufficient basic quality to find an article by author name, title and keywords, and that while categorization into a standard classification system would be good, it should not be done *"at the expense of getting material mounted."*

Secondly librarians are very aware of the lack of knowledge among academics regarding copyright ownership and are concerned that without expert intervention, infringements will occur.

Thirdly there is also some concern about the time and resources needed to provide services to the repository, and about the burden which advocacy initiatives, metadata checking and user induction might impose upon the workloads of library staff. If the repositories grow from being projects into becoming established institutional systems it cannot be assumed that librarians will be willing to absorb these new tasks into their current work patterns, and new posts may be needed. Some project officers are persuading librarians to consider this extra role by promoting the new skills and experience needed as a career development opportunity.

- **Advocacy with Research Committees**. A particularly relevant target group, obviously, is the Research Committee or Research Board. *"Persistent contact and one-to-one meetings with potential practitioners, and people with real influence – for example School and College research committees".*

  Some Project Officers have successfully taken the opportunity to highlight the potential value of the repository as a tool for the forthcoming RAE process, showing how it might provide *"integration into RAE databases or other college wide publications databases"*, but there is not complete agreement that this works. Two particular concerns have emerged, firstly some mangers have regarded the repository as a 'diversion' from the serious business of RAE preparations rather than a supporting tool, and secondly the requirements of the RAE are that the publisher's version of the article is submitted, not the author's final version which may be the slightly different document available in the repository.

- **Advocacy with Senior Managers**. These are a key stakeholder group who must be involved and Project Officers have used a range of arguments and strategies to convince them of the benefits which the repository will bring to the University, and to lobby them as champions. *"Talking to people at every opportunity, especially the influential ones such as PVCs, and making presentations at relevant committees."*

A process of education on the issues is being undertaken, with project staff explaining how the repository might help the institution to benefit from changes in the external environment, such as increased co-operation from publishers, and the possibility of future open access deposit mandates from funders. Managers are being shown existing repositories *"with high value content"* or which *"showcase"* or *"shop window"* their University's research outputs to encourage them to copy the model.

For repository developers, the prime benefit which senior management can bring to the repository projects, is that only they have the power to ensure that repository use becomes mainstream institutional policy. *"I think top level 'mandating' or integration into standard business practices will be key to the success of OA repositories.* Once this is achieved, the strategies for facilitating the set up and deposit of materials are in place.

It is unclear as yet though, whether mandatory deposit is likely to happen in the HE community, and by no means certain that there will be a blanket approach across all institutions. Those with a very managerial culture may be able to impose it, but others are more collegiate (one might say fragmented even) and simply don't operate this way. During the lifetime of the evaluation, some in the open access community had hoped that statements from the UK Government and the Research Councils would act as a lever to mandatory deposit policies becoming the norm, but the idea failed to gain the desired level of support from the House of Commons Science and Technology Select Committee, and the recent RCUK Position Statement on Open Access, while encouraging deposit produces caveats for those who do not have institutional repositories. Indeed the Statement expresses a preference for deposit in subject rather than institutional repositories.

Discussions with Senior Managers have also teased out other concerns which prevent them from moving repository initiatives forward. They remain somewhat unconvinced by arguments about reducing journal costs or the *"social good"* of open access publishing; they are not moved by the idea of free public access to research outputs, and some are, as ever, reluctant to change the status quo. They feel ill-informed about the true costs of start up, maintenance and management, which, as we have seen are not yet clear. With finite financial resources to manage they need to be certain that

investment in the repository will bring value for money. They need to be convinced that such repositories are sustainable in the long term which requires a robust and persuasive exit strategy to ensure the transition from a project to an embedded institutional service. They are concerned that repositories are as yet *"experimental and unproven"* and largely based on projects with a finite lifetime. They want *"reassurance that the repository will be properly run and organized".* They believe that populating the repository will place a burden on academics and are reluctant to cause this. They are concerned about quality control, plagiarism, the effect upon the revenues of Learned Societies, and often lack a conceptual understanding of Open Access.

Some of these concerns will be easier to overcome than others, and SHERPA has already provided answers which are well documented on the SHERPA website. It is clear though that with conflicting demands upon resources, the long-term case for the repository must be sold with vigour to this key stakeholder group.

- **Advocacy with institutional policy-making committees.** Because of these concerns, some repository developers have entered into direct dialogue with policy makers, in order to encourage the development of statements of policy on open archiving, or failing that an agreed set of recommendations, even if deposit does not become mandatory. As noted above, there is not yet much evidence of mandatory deposit becoming enshrined in institutional policy, though perhaps this is a reflection of the stages of development which many of the repositories have reached. It is still 'early days'. But Project Officers do seem to have been faced with a 'chicken and egg' situation; without clear institutional backing for the repository it can be difficult to persuade academics to deposit; without clear support and enthusiasm from academics for deposit it can be difficult to persuade managers that this should become a matter of policy, or the institutional norm. The projects have also suffered from the fact that at this stage, many are impermanent projects, and this colours how policy makers regard them. As one repository manager *said "… we secured a cautious endorsement of the repository – but only on the understanding that it is being endorsed as part of an experimental project rather than necessarily having any implications for institutional policy or practice. I think that any endorsement is welcome and may help to populate*

the repository – though it falls far short of the type of institution wide policy that is likely to be needed to encourage (or mandate) widespread self-archiving by authors." Project Officers have also noted that many of their institutions already have policies for some kind of well-established central database of research publications which is used to collect data for the RAE, or to generate standard webpage publications lists for individuals or departments. These may well simply consist of citations rather than having the advantages of an open access institutional repository, containing some, if not all, full text papers and underpinned by metadata which facilitates easy harvesting for resource discovery. The necessity here then is to convince policy makers of the complementary added value offered by the Institutional Repository model, and to provide them with at least a vision of what the benefits of a single overall institutional system might be, because it is clear that asking academics to provide the same data in different ways to a multiplicity of institutional systems is undesirable, and is unlikely to move policy makers to act.

- **Advocacy with Heads of School or Department.** There is much evidence that 'getting a Head on board' as a champion can provide huge impetus towards populating the repository and providing an example for other Departments. Durham, for example, has had good success with an enthusiastic Head of Geography who acted as an intermediary between the repository and departmental staff and who encouraged deposit, particularly among academics who are prolific authors. UCL had a similar experience with their Dean of Clinical Science who mandated his staff to deposit; Glasgow agreed with two Departments that their publications should be deposited. Such support can make an invaluable contribution to the success of the repository. *"Perhaps the most significant key to success has been getting the backing and support of the head of a department or other key player in the department. Such staff are generally in a position to decide that the whole of a department's content should be added. Our biggest successes have been in departments where this has been the case. It is definitely worth spending time targeting such key players as part of an advocacy campaign."* Identifying such 'in house' enthusiasts has helped some repositories to reach their targets for deposit quite quickly. But as well as this several have observed that being able to demonstrate a repository with a good body of content is far more likely to impress and encourage potential new depositors

(and indeed senior managers) than an uninviting, empty virtual space and a theory of how filling it might benefit the institution.

- **Advocacy with established groups of academics and researchers.** Advocacy with specific well defined groups, perhaps a research group which cuts across departmental boundaries, or a special interest group within a subject discipline has also proved useful. It is noted elsewhere in this report that academics and researchers tend to identify strongly with their cross-institutional community of practice, often more so than with their university. For this reason demonstrating how the group might be represented within the repository can help trigger deposit.

- **Advocacy with the editorial boards of in-house journal publishers** has posed particular problems. Some have seen the repository as *"something of a threat to an income-generating arm of the School"*, and it has sometimes been difficult for repository managers to allay fears of rivalry from such groups.

Launching the Repository – most repository development teams have held launch events or are planning to do so.   Pulling together the information provided by the various Project Officers, these are the ingredients needed for a successful formal launch event:-

- a pleasant location, which does not have to be the library
- the presence of the Vice-Chancellor and/or other very senior staff, *"important for raising the profile of the project and demonstrating that the School consider this to be an important development"*
- a mixed audience of academics, researchers, faculty heads and managers
- presentations from
    - the development team, to explain the content of the repository, and how depositors use it. Also to explain the benefits of the repository to the institution, to the individual author, to other researchers and to students
    - an external speaker to emphasize that their repository is part of a much wider network of repositories, which is well established, world-wide, and part of the Open Access movement
- ample time for questions and answers, and someone who can deal with *"all their questions on copyright"*

- food and drink to encourage social mingling and a relaxed atmosphere *"wine and snacks were provided … and this was appreciated by the academics"*!

It is noted though, that some repository launches were much more low key, simply because the projects did not have the money to fund such a grand full-scale event.

Direct one-to-one contact with academics and researchers has been used as a key strategy by all of the SHERPA projects. Various approaches have been tried, including explaining the high level concepts of open access and how they might impact upon the publishing behaviours of the individual, fostering a desire for change in the way their research outputs are disseminated, encouraging authors to claim ownership of their work, guiding and supporting them through the deposit process. All agree that one-to-one advocacy has proved very time-consuming, and while some have found it useful particularly in the early stages of repository population, others report that is less productive, simply because of the amount of input required to engage each individual author.

One-to-one advocacy has been used in the context of

- contacting individuals in Departments which have collections of working papers on their web sites. The repository is offered as *"an alternative method of making papers available"*, while taking the opportunity to emphasize the advantages which the repository has over a web page, such as self-submission, *("not having to wait for the web manager to do it")* ease of upload and *"more reliable retrieval via Internet search engines such as Google"*.
- trawling staff web pages for prolific authors, or for those offering full text versions of their publications, and asking for their articles to be deposited in the institutional repository
- identifying university academics through databases such as Web of Knowledge. These are then approached by email or telephone and asked for permission to deposit an identified article. *"I do recommend approaching authors by email; they often do reply when it is about an article they have written."* Once consent has been gained and the article deposited the author is informed, and can see the article in the repository. The next step is to ask the individual author to self-deposit further articles, and to guide and support them through the process until they can do this with confidence.

- contacting academics known to be interested in the Open Access movement, and asking them to deposit
- identifying journals with copyright policies which permit deposit in institutional repositories, and then approaching university academics who have authored articles in the journals is also successful

There are examples, though not many, where the user seeks out the repository rather than the repository looking for the user. In the case of the Bristol repository, for example, it is reported that two Engineering departments tracked down the repository in its very earliest stages of development because they had seen examples of other institutional repositories and wanted to use one. Such enthusiasm can be exploited both to populate the repository and to provide a much needed champion for advocacy activities.

Publicity is of course a key advocacy tool to encourage deposit, and most of the projects have produced various kinds of publicity materials. These activities have included:-

- publication of articles in in-house magazines and newsletters to inform staff of events and of the progress which the repository makes over time. This is particularly useful to partners who do not have a large budget for repository launch events and presentations.
- production of promotional materials such as leaflets, fliers, posters, bookmarks, postcards etc for distribution throughout the universities and at events
- production of FAQs for the repository websites, which have helped answer many of the questions commonly asked by authors, and there are good examples of these at the LSE, White Rose and Oxford repositories, among others

The language barrier

It is worth noting here that the terminology used to describe the institutional repository to the community in advocacy initiatives needs to be considered carefully. This is not an issue unique to SHERPA; it is always a concern at the interface between the technical and the non technical audience. For example, in a recent discussion (in the context of learning object repositories) on the WEB-SUPPORT JISCmail list a contributor wrote *"Increasingly I worry that the language that we use in*

our discussions tends to reinforce our current institutional silos rather than help break them down? … We all use the word repository in a semi-technical sense amongst ourselves …. But somehow that term also leaks out into our conversations with end-users. So we go and talk to our academics or computing service staff about setting up an 'institutional repository' when the words they really want to hear are 'content management system' or even just 'database'." It has been encouraging to listen to discussions of this concern in SHERPA meetings, and there is certainly awareness that some of the terms which development teams use comfortably among themselves, such as 'Open Access', 'serials crisis', 'author self-archiving' and even 'repository' (though less comfortably when the term is 'publisher's version' or 'author's final copy'!) are not meaningful to academics, researchers and managers and create barriers to understanding. *"We have"* said one Project Officer *"lost the plot with the language"*. A good suggested solution was that all publicity and advocacy materials should be *"re-read with a naïve eye". "We need to get someone to read and remove words not immediately comprehensible. We have to grab people in the first three lines"* and that the repository itself should be named with care.

In summary then a variety of successful strategies to populate and promote the repositories has been developed, and these are being adapted to reach different stakeholder groups. It is clear that some of the projects work on a very small budget and therefore have not had the opportunity to stage major launch events or buy professionally produced promotional materials. SHERPA Project Officers at such institutions report that this has been a major difficulty for them. However there are strategies here which have been seen to work, and which any new repository developer would find valuable. What is clear is that a flexible, multi-faceted approach to advocacy activities is needed, one which reaches all stakeholders and takes into consideration their particular concerns, for as one Project Officer said. *"Each approach has merit and none works as well in isolation"*

4.3 Other key issues which have emerged during the project

Subject and disciplinary differences and attitudes towards subject repositories

Differences in response to publication in institutional repositories across different subject disciplines have been widely noted in the recent literature. Here it is generally claimed that biomedical and health sciences are keen to deposit (though

with caveats regarding separating out peer reviewed and non-peer reviewed articles), arts and humanities researchers (who publish more book chapters) less so, and this is reflected to some degree in the profile of archived materials in the SHERPA repositories.

The SHERPA Project Officers have, however, made determined efforts to include a range of subject disciplines in their repositories. At the end of May, for example, the Nottingham repository contained 29 papers from the Faculty of Science, but also 16 from the Faculty of Arts and 4 from Law and Social Sciences. The Oxford repository contained around 150 Clinical Medicine papers, but also 26 Literature and Rhetoric, and 76 Social Sciences

There are several reasons for the preponderance of Science Technology and Medicine articles. Firstly, the focus for targeting content and for advocacy initiatives has often been upon STM disciplines, and the well known cultural differences, such as the long tradition of archiving research outputs by Physical Sciences authors is noted and reflected in some repository content. Interestingly, though, Project Officers have reported that in disciplines such as physics or maths where deposit in subject repositories is already well established, there is sometimes a reluctance to deposit again in another repository. A preference for subject repositories has been reported elsewhere in the OA community, and at several meetings we have observed researchers who are very committed to open access express this point of view. They simply do not wish their research outputs to appear, as one said, *'alongside today's canteen menu'*. Instead they prefer to publish their research findings within the context of their community of practice (as indeed they do when they publish in a journal) rather than within the context of their institution, and it may be that time or institutional pressure will be needed to persuade them to change their established habits. Were mandatory deposit of research outputs in institutional repositories to become the norm, and were these researchers to continue their preference for subject repositories, duplication would become an issue. Indeed, the suggestion has been made that institutional repository managers could download research publications written by their academics and researchers directly from subject repositories, safe in the knowledge that copyright clearance had already been obtained. How important this potential for duplication is depends upon where you stand. From the point of view of the individual institution, the priority could be to use the repository to showcase the intellectual output of its researchers. Where the not uncommon phenomenon of papers authored by researchers in several institutions

occurs, it follows that the same paper will inevitably be deposited in several institutional repositories and maybe in subject repositories too. Further copies may be deposited elsewhere when an author moves to another institution. This may not matter to each individual institution, but from the point of view of the user of a harvesting service, to have all of these copies of the same paper is inefficient. It is clear that duplication could become common, leading inevitably to versioning problems which must either be resolved by the harvesting service, or rely upon the skills of the information seeker.

On more than one occasion SHERPA project staff have been heard to argue the case for using an institutional repository rather than a subject repository on the grounds that the location of the server on which an online article is placed is immaterial, because good harvesting tools will find it wherever it is. However, the facility to cross-search these and create 'virtual' subject repositories may not alone be sufficient to encourage a preference for institutional deposit. It may be difficult to replace an established culture of using subject repositories.

Secondly, Project Officers have noted that the publication model is different in different subject disciplines, hence repositories which have focused upon the deposit of post prints of peer reviewed journal articles only will have more depositors from the sciences than from the arts and humanities, where the publishing model leans more towards books and book chapters. There are differences within the sciences and engineering though, with *"engineers very keen, medics very wary",* chemists *"averse to preprints"* and computing scientists and mathematicians *"well-used to the concept"*. Added to this is the fact that scientists are more likely than their humanities colleagues to have a PDF version of their work to deposit, so it is less effort for the academic to provide one.   Furthermore, some Project Officers have pointed out that publishing in books by Arts and Humanities researchers provides income to the author, in a way that publishing in journals does not. This would account for some reluctance to make the full text of published work freely available, though conversely, of course could encourage the deposit of bibliographic data only where the repository permits this.

Thirdly, some project officers reported a growing interest in open access archiving among Social Scientists, which is being hampered by the reluctance of their key publishers to permit it.

It is clear from the experiences of the SHERPA Project Officers and others in the wider open access community, that academics in many subject areas can be encouraged to deposit in institutional repositories. The different practices in scholarly communication in different subject cultures though must be considered, and advocates need to understand very clearly why the arguments needed to persuade authors to deposit will have to be tailored to suit the relationships between different subject groups and their publishers.

Engagement with publishers and copyright issues

 "Despite Stevan Harnard's emails about 90% of publishers being 'green', most of the papers I receive don't comply with publishers' copyright requirements."

Even when advocacy campaigns have persuaded authors to deposit, there may be further hurdles to overcome. Running through all the conversations with project officers is the complexity of the relationship between institutional repositories and the publishing industry, which has been the subject of high profile and vociferous debate in the OA community. Some supporters believe that 100% deposit in a repository is an achievable goal, and at least one academic department is apparently even willing to impose penalties on authors who do not do so. *"It is the school policy to deposit all research output. Anything not in the eprint archive doesn't count for promotion, CVs or RAE."*

Yet evidence provided by project officers suggests that their experience of legal reality is rather less straightforward than this would lead us to believe, particularly where publishers' copyright restrictions are concerned.   When asked whether these had proved a barrier to the population of the repositories, one responded *'not yet'*, two said *'sometimes'*, but two thirds said unequivocally *'yes, copyright restrictions have proved to be a barrier to deposit'*. Project Officers have very much erred on the side of caution when presented with ambiguities in their dealings with publishers, and hence they have had to spend an inordinate amount of time clarifying and interpreting the subtleties of copyright law, and the nuances of copyright transfer agreements. On many occasions conversations have been opened with the line *"I am not a lawyer but …"*

Of particular concern to Project Officers have been that

- the RoMEO database only covers a fraction of publishers. Furthermore it is noted that the SHERPA version of RoMEO and the Southampton version with the same name now give substantially different information. Project Officers have also found that even when the RoMEO classification indicates that copyright clearance is granted, *"one still usually ends up searching through the publisher's web site to find the precise form of words they require for acknowledgement."* .

- chasing up copyright agreements from non-RoMEO publishers has proved a prohibitively time-consuming activity*. "We have focused on those that don't provide a barrier where possible."* As a first strategy to populating their repository, several repository developers were selectively targeting articles from 'green' publishers, but were concerned that a compiling a complete collection of an institution's research outputs would involve substantial extra work with non-green publishers. *"In populating the repository I've been very selective in choosing articles to download and deposit from publishers that are in favour of archiving the published pdf."* There is a tension here between fulfilling the requirements of the SHERPA project to time and in the most efficient way possible and what the reality would be if this were an institutional initiative, not a project.

- information on copyright matters given on publishers' websites can be unclear, and disparities had been found between the publishers' stated policies and the copyright agreements to which they had asked authors to sign up. At the start of the evaluation Elsevier, for example, was publishing contradictory information on their website and in their Copyright Transfer Agreements. However, persistent lobbying for clarification from the SHERPA Project has led to new clarity particularly in policy statements on Elsevier's websites, and those of other publishers too

- publishers' policies may change over time and what is a valid action now may not be permitted in the future *"permissions are driven by publishers' perceived commercial pressures. Therefore a change of policy by publishers could make this a problem once again, and the issue of authorial rights cannot be ignored, or the underlying issues left as a potential problem in the future".* Does the fact that a publisher is currently 'repository-friendly' apply retrospectively to a time when this was not so? Can the repository manager effectively over-ride an original restrictive copyright transfer agreement and download material without the further permission of author or

publisher?   And if the situation is reversed, and a publisher withdraws consent to deposit, will the repository manager be legally required to remove previously deposited material?   *"Our experience is that publisher policies are not always clear cut and static and basing our interpretation of the policy on these often shifting sands has led to a few setbacks."* In such a fluid and unsettled environment, these subtleties matter, and SHERPA staff have spent much time engaged in clarifying such detail.

Some publishers too seem to have modified their views as the implications of deposit in institutional repositories have become reality. It has been interesting to note, for example, that during the lifetime of the evaluation, Blackwells the publisher have drawn back from their initial support of deposit in the repositories, and have moved from 'green' to 'yellow' status. Project Officers have received many confusing and contradictory messages from Blackwells' staff in response to queries about specific articles. Even at their company managerial level there has been disagreement. One Project Officer reports *"I have had a Blackwell manager in my office stating categorically that the company acknowledges its green status and supports open archiving"* while another has been told that Blackwells *"is concerned that the distribution of published articles within such databases may potentially undermine journal subscriptions, and so feel that… restrictions are currently necessary for the well-being of the journal subscription base."* Inevitably this led to a period when Project Officers felt uncertain as to whether their assumptions about depositing papers published by 'green' Blackwells were in fact sound, or whether previously deposited papers should be withdrawn.   Where Project Officers have erred on the side of caution and meticulously sought permission from the publisher to deposit every article of interest, their letters and emails have often gone unanswered, and they have been left wondering whether or not to mount the papers without explicit consent. Or the publisher has said that they do not have the capacity to deal with many tens of requests for permission to upload individual articles. Such uncertainty has led to time-consuming activities for hard pressed project officers, and indeed to the inclusion of citation data rather than full text journal articles in the repositories in several instances. If the experiences with Blackwell staff prove to be typical of other publishers, they could well impact on the workloads of future repository developers.

- A further related issue which has arisen with publishers is that some are reluctant to accept the librarian or repository manager as an intermediary between themselves and their authors, with whom they have the legal copyright agreement. This is not a problem where it is clear from the RoMEO database that the publisher permits deposit, but where permission has to be requested, or where the author is unwilling to deposit without explicit permission this has meant that Project Officers (whose aim is to encourage deposit by making it as easy as possible for the author to do so) have in some instances had to ask the author to write to the publisher requesting permission to deposit. Even when a model letter is provided, this is another task to be done, and another potential barrier to successfully depositing articles. There seems to be a perceived subtle difference on the part of publishers between agreeing deposit by an author with whom they have had a professional relationship with a legally binding contract, and deposit, particularly bulk upload, on behalf of academics by a repository manager with whom they have not.

  Nor is the legality of 'click through' licenses always clear, particularly when it is the repository manager, not the academic author who is depositing. In this context, questions have arisen when papers have been harvested from other open access repositories for inclusion in the institutional repository, triggering discussion of whether permission should be sought from the author again, and indeed whether the author or the institution owns the copyright to a published journal article. Doubts have been expressed about whether asking permission of an academic to deposit, and simply including a request to accept the repository's terms and conditions is sufficiently rigorous to comply with law, or whether the academic actually needs to "*login and do the final click*". Repository managers have differed in their attitudes towards what needs to be done by whom to keep within strict compliance with the law, a reflection perhaps on the vagueness of available information.

- publishers do not always release the 'author's final version' of a paper, nor do they permit publication of the publisher's pdf. This is described as a 'major issue' particularly with Elsevier papers and has meant that repository staff have to chase up a final version from the author. Some have found that "*most staff do not have a suitable copy, and do not have the time or*

inclination to 'create' one". Indeed, the practice of authors disposing of the final copy they send to the publisher once their article has been published has been shown to be quite common. Alternatively some only have "*altered and updated versions of what was originally published"* which they have amended for teaching purposes, so that in effect, no 'author's final version' is available for deposit in the repository.   The outcome of this and other difficulties in obtaining permission to deposit has been that in some instances the repositories contain bibliographic references to many papers, (some of which require journal subscription or payment before they can be retrieved) rather than the full text of the papers themselves, either because copyright agreements did not permit deposit, or because there was no author's final version in existence. *"Currently of 578 records in our repository, 222 are full text. Copyright agreements do not permit us to add the rest."* Project Officers rightly identify this as an issue; it is contrary to the spirit of open access to research outputs upon which the SHERPA project is based and was funded. It is a compromise between displaying as complete a picture as possible of the research outputs of their institution, and creating a full open access eprints repository.

- Some publishers were making distinctions between copies of papers deposited on a personal website (which were permissible) and copies deposited in a repository (which were not), which has hampered SHERPA's original aim to deposit full text articles in institutional repositories. Project Officers suggest that publishers perceive repositories as *"a greater threat than personal web pages"* because the latter are *"less organized"* and *"possibly less visible than IRs."*   They have found this reflected in journal policy. For example, at the time in question, the policy of the Royal Society of Chemistry permitted the author to *"… make available the pdf of the paper … via the personal website(s) of the Author(s) or via the Intranet of the organization(s) where the Author(s) works"* which, as worded, excludes deposit in an institutional repository, and the Cambridge University Press gave authors the right to *"post a pre-print of the contribution on their personal or departmental website"* and *"post the contribution as published on their own or their departmental home page",* but not in an institutional repository.

- Where an article has multiple authors (and some have many tens of authors from more than one country) it is not really clear whether or not permission

needs to be obtained from all of them to deposit. Nor is it clear whether a joint author should have the right to ask for an article to be removed from a publication, nor how differences in copyright law in different countries might affect online publication in UK repositories. In the absence of such clarity Project Officers often proceed to deposit, with the proviso that papers will be removed if their inclusion is challenged.

Dealing with copyright issues for the retrospective deposit of already published articles has been one of the more difficult tasks for Project Officers. Much has changed during the short lifetime of the SHERPA project with some publishers, such as Oxford University Press, becoming more positive towards publishing in repositories and others back-tracking their previously favourable positions. Even where publishers are apparently 'green', the devil has proved to be in the detail of individual agreements made at different times in the past, which may or may not be over-ridden by whatever agreements are currently in place. Dealing with all of this uncertainty has been time-consuming and has often required an admirable amount of dogged persistence and determination. Even if all is not yet clear, the activities of SHERPA Project Officers have exposed and resolved many contradictions and ambiguities.

It is clear from what Project Officers have said during the evaluation that currently most academics simply sign away copyright to publishers without thinking or even caring about what they are doing. Their aim is to have their papers published. The SHERPA project has provided an opportunity to show what is needed for the future if repositories are to flourish as a link in the chain of scholarly publication. This is that academics must grow more alert to the terms of the agreements which their publishers put before them, must become more proactive in their relationships with their publishers, and must learn to question any restrictive clauses which asks them to sign away their rights, or which impedes deposit in an institutional repository. Our own recent experience has been that when this is done, publishers are often willing to make minor but significant changes to the wording of agreements or to provide entire alternative versions - they just don't advertise that they will do this.

4.4. Engagement with academic and research staff

"Many academics fit into the stereotype that academics generally think open access is a good thing but don't want to do any work to support it: however, there are

academics who are concerned about the current publishing system and worry that open access will undermine an imperfect but working system to replace it with an untested and possibly unsustainable system."

The strategies chosen by Project Officers to populate their repositories have apparently met with some success. There is plenty of evidence of populated repositories. It was unexpectedly difficult though for the evaluation to reach the numbers of academic authors hoped for at the outset. The agreed procedure was used, and it is known that most Project Officers distributed the online questionnaire to academics in their institution. The response however was limited. This fact was discussed at the SHERPA Programme Meeting in April, and the general consensus was that deposit by individual authors, particularly unmediated deposit, had been slower to take hold across the board than anticipated. As mentioned before, the first strategy for filling the repositories had very much focused on getting a body of content deposited so that there was 'something there to demonstrate'. This had meant either bulk uploading from other OA repositories or 'friendly' publishers, or cultivating a departmental champion to trigger deposit, or mediated deposit facilitated by the Project Officers and repository team. There had simply not yet been the expected level of self-deposit and hence direct engagement with the repository on the part of academic staff. This itself is significant.

Although the evaluation was not able to reach the hoped for large numbers of academics, those who did respond provided useful and positive information. There is clear evidence from these academics that advocacy at meetings, whether these were part of the formal university communications structure, or project-specific events such as "launch events" or conferences are effective communication channels. This is encouraging because Project Officers have noted that *"once on board through a Conference, they got their peers on board".* When asked who or what motivated them to deposit their articles in the new institutional repositories, academics often mention particular 'librarians' by name, and seminars which they attended; *"The e-print seminar. I felt that the e-print project was a good one and I was keen to contribute to it".* Successful promotional activities alone though are not really enough; one Project Officer commented that ensuring subsequent commitment from the academics was vital as well. *"Use meetings and committees to highlight the repository – but also to try to secure some commitment or action from the academics."*

Priorities and personal benefits

What might ensure commitment, of course, is mandatory deposit, but lacking a policy mandate it becomes essential to persuade individual academics that deposit will benefit them personally, and this is not an easy task. It is clear from what academics say that depositing their publications in an institutional repository is not a high-priority activity for them, often citing *'lack of time'*. Academics also report that they are *'waiting to see what happens'* before committing themselves to making deposit in the repositories part of their normal work practice.   There are various reasons for this; one is that they are unsure that the repository will continue beyond the end of the project. They are also unwilling to commit time and effort to an unendorsed project, something which has *"not yet become integrated into mainstream university systems"*.   Project Officers also note that academics are so preoccupied with their academic duties that any other calls upon their time and attention simply add to their 'information overload' problem. *"There are so many circulars, notices and newsletters that come across an academic's desk that only the strictest assessment of relevance can deal with them. This means that most go straight in the bin or are ignored. Anything which looks like it is selling something or selling a utopian ideal will be glossed over for immediate applicability or practicality and binned unless there is an immediate action which brings benefit"*

However Project Officers also say that persistent, targeted one-to-one contact with individual academics is useful to gaining commitment, particularly when a clear personal benefit can be demonstrated. *"Approaching academics by email about depositing one of their (named) articles is effective, because their own article is involved."*   Academics themselves identify a further 'personal benefit', namely that the repository is a place to put their older publications which may be out of print or otherwise unobtainable, and this is a need which repository managers may wish to pick up on and exploit in their publicity and advocacy campaigns.

Assistance with the deposit process

"I was lazy and the librarian very helpful"

Once the academic is committed, *"providing a good mediated deposit service"* is essential.   From what academics say, it seems that it is not the actual deposit process which they find difficult, but that the preparatory stage beforehand is the time when support is most needed. Various practical issues arise at this stage,

which might require the intervention and assistance of repository staff. These include *"copyright permissions and the production of pdf files"* and the preparation of metadata. Not all academics are able to supply a publisher's pdf file, nor are they able to convert their own final version to pdf. They want either the repository or 'an IT person' to do this for them. They also complain about having to collect the detailed information required for the deposit process. *"The questions were detailed – in particular, it was a nuisance to find the actual volume to look up the ISBN / ISSN number".* What they really seem to want is someone else to take the task out of their hands.

Copyright clearance and the academics' relationship with their publishers

One academic stated unequivocally that the success of the repository would depend on the willingness of the repository manager to take responsibility for copyright clearance. This, he said, *"should be the duty of the repository, not the depositor".*

Copyright and IPR issues are clearly of great concern to these academics. They have problems with the length of time and amount of effort it takes to gain permission to deposit from some 'non-OA' publishers, and do not see this type of activity as part of their job; *"securing permission took time, and I had to do it".* An author who had only deposited one paper in his IR stated that the time taken to get copyright permission to deposit his article had put him off depositing more of his publications. When asked he said *"Yes, in practice it has. I see this as just a chore and more so because like most academics I'm not expert in it. We have a copyright person here who, e.g. clears copyright for study packs, and I'm sure he knows far more than I do how to get clearance without any bother."*

Academics also point out that even when they are the sole author they are not always the sole copyright owner of any given text, and reproducing an article or book chapter in its entirety in a repository may require them to get the permission of several copyright holders. There may even be a cost involved – which, of course, begs the question of who would pay it. This is illustrated by a conversation with an author whose work contained images owned by others. He said *"…where a book contains images, the images may be under their own copyright and the copyright may be for one edition only (this was the case for my latest book). I can't imagine many of the image copyright holders agreeing to have their images reproduced freely on the web, though perhaps low-quality versions might be allowed. Either*

way, each image copyright holder would have to be approached separately. In my case getting copyright in the first place (for the book) meant writing to obscure bodies in Japan and in some cases paying large sums (£150 or more) for use of the image in just one academic book edition."

Academics emerge from our investigations as being very unsure of their own legal status as authors. They lack legal knowledge, do not want to or have time to acquire it, and are fearful of inadvertently breaking copyright law.   At the same time, they value highly their relationship with certain publishers and are reluctant to do anything which might damage it. One expressed this in general terms, saying *"I don't particularly want to fall out with publishers, so I might have reservations about publishing material if its current publisher objects."* Another was more specific; *"If I deposited an unpublished version of a manuscript, the medical journals where I often publish would not consider the paper for publication. They often stipulate that no more than a 300 word abstract may have been published previously in any form."* They need to be absolutely certain of where they stand. *"I don't know copyright law well enough to be confident that, for example, a no response to a letter of mine saying that I will take no reply from a publisher as a 'yes', is adequate to cover me."* In the absence of such certainty, they may tend to take the line of least resistance and simply not deposit.

How their publications are presented in the repository

Academics are concerned both about how their individual texts appear in the repository, and how repository material as a whole is organized. *"I want to see how successfully the library formats the first paper, as well as how much work it involves for me".*

 Lacking a publisher's version of their work, they question whether the repository will be able to display their texts to the same high standard. As one pointed out *"I wish to disseminate, but only if the manuscript is identical in all important ways to the published version and formatted to look reasonable, i.e. not in multiple files (often we have to supply tables and figures and figure legends in separate files and these need to be combined appropriately into the main manuscript."* Repository managers will need to convince authors that this can be done, and already some Project Officers have found that 'reconstructing' articles may not be straightforward. One reported *"sometimes the author has a pdf from the publisher which is not the final*

version and can't be tweaked. You have to reconstruct the final version from the latest version to match the pdf."

A further reservation was expressed about material which was not all 'mainstream English text'. *"I have some reservations about publishing material which contains non-English text or images since I imagine these might not always appear correctly on someone else's screen".* Authors care that their work appears as it should. The added value which publishers offer includes peer review services certainly, but presentation and a professional layout are also important to them.

There was also concern that how content is organised and structured in the repository itself should be browsable in as many different ways as possible. *"Presentationally, I am not sure that a Boolean search and vaguely alphabetical page is the best display mode. Subject groups and research groups might be allowed to group outputs on a display page?"* At present repositories offer listings in various different ways, (including a view of subject and research groups) but there is no overall consistency. One can browse by subject, department and research centre, format, or year, but most repositories do not offer all of these options. Given this flexibility, Project Officers may wish to consider the advantages of providing their academics with the view of the repository which they most prefer.

Citation and versioning problems

Some academics further identified not being able to use the publisher's pdf (or even having any kind of satisfactory final electronic version to deposit) as a potential barrier to deposit because they want only the final version of their papers to be cited. They *"are not convinced by the argument that publishing the final draft at least spreads the author's ideas."* They are more concerned that confusion will be caused by different versions of documents being published in different places and also that this will lead to a lack of rigor in bibliographic referencing.

The effect of this upon the individual author was explained by one clinical medicine academic. He said *"I don't want people to cite a published paper by giving the institutional repository address rather than the published reference in the Lancet! This would damage my citations for the paper. When publishers will not agree to us posting the published version we have to resort to prior manuscripts and then either update them to being identical to the published version (at some time cost to me or my staff in doing the updating) or we tolerate slightly different versions. When I read*

someone else's paper I want to know that I am reading the published version and can quote from it without fear that it has been changed. "

The repositories will, of course, contain all the metadata needed for correct citation, but the fear seems to be that repository users will not cite properly, but perhaps simply point to a URL where the article can be found. Project Officers have recognised this, and have discussed but not resolved how ways might be found to get citation data onto the actual documents in their repositories as well as holding it in the attached metadata.

Some Project Officers have also expressed doubts that persuading academics of the value of increased visibility, impact or citation is effective. *"Citation linking doesn't seem to impress at all",* said one Project Officer. Another though was more cautiously optimistic. *"Increased citations sound good, but (I think) is a 'jam tomorrow' argument. There have been so many changes that have been sold as being beneficial (IT, email, RAE, increased student numbers, new funding mechanisms, new contracts etc. etc) that there is a deep and in some cases aggressive cynicism about anything which is presented as "change your working life/extra work now, benefits tomorrow". So news of increased citations sounds good, but is not a prime driver – so far. With more evidence and personal experience, I think this will become more important."* Nor is there great confidence among some Project Officers that published statistics claiming to show that OA publishing increases citation impact are robust and valid.

Duplication of effort and online 'publishing'

"Most people don't have time to re-do what has already been done, so it would undoubtedly be helpful if there were a 'one stop shop' approach, where we deposit just a print copy or e-version and the repository staff do all the rest: permissions, scanning etc."

A further reason why some academics are reluctant to begin the deposit process is that they believe that they have already 'published' online, and that this is just duplication of effort; the repository is just another place to put their work. They remain to be convinced of the 'added value' which managed institutional repository services can offer.

Others cannot distinguish between publishing in a subscription journal and depositing or 'publishing' in a repository and apart from a small number of well-informed and interested academics, few are swayed by arguments about the journals crisis. Publishing is publishing; once their work is available somewhere, their peers who need to find it will do so, so they see *"no urgent need to publish articles already published".*

The places where they already 'publish' are

- *"in a database for the RAE"* infrequently as yet, but probably set to increase as the 2008 RAE approaches
- on Departmental websites and in local repositories
- on their personal websites *"I already make my publications available on my personal web site, why should I place them in the repository too"*
- in subject repositories *"I already deposit my publications in a subject repository"* or *"I have used the Lancaster sociology repository for ages,… I am also administratively responsible for research in the department and this seems a very useful promotional tool for my institution - that at least is the feedback from Lancaster"*
- on research group websites *"I am working on a website for my research group which will include published papers and abstracts as well as questionnaires which we develop and license to others."*
- in web-based publications *"I have published material which is in web-based publications (e.g. forthcoming e-edition of Macmillan Encyclopedia of Religion)"*
- on other institutional or personal websites *"on artists' and British Council websites"* or *"I have seen my papers on many US sites"*

Widening access

The *"widening access"* argument needs to be used with care, and Project Officers disagree on its efficacy, with some seeing it as a key argument, and others not. Some Project Officers observed that as yet open access is not a major factor which most academics consider when deciding where to publish. They are reported as showing a lack of concern about complete *"free public access to research".* Their priorities lie elsewhere. They *"aren't interested because publishing in reputable print journals and RAE scores take precedence over wider access",* and *"Most academics are happy with the present systems of scholarly communication and are unwilling to*

spend time on changing it." Some perceive OA as relevant to the 'science' disciplines only. There is also a lack of conceptual understanding of the nature of Open Access, or concern about the political nature of the OA movement, particularly a perception that it is not driven by academics or their needs.

There is also a recognized need for reassurance that deposit is complementary to and not instead of the current publishing model; that it is 'widening access', not 'relocating the point of access'. Academics have a vague unease that a consequence of opening up access might be that they *"will lose control"* of their work, though how this would happen proved difficult to articulate. They worry irrationally that somehow their work will be easier to plagiarise from a repository and that the peer review process will be damaged by publication outside of books or journals.

Several Project Officers suggest that academics are simply happy with their current journal publishing habits, and, like Senior Managers, are unmoved by the journal pricing argument which they do not perceive as restrictive. They see *"no evidence of what impact, if any, institutional repositories will have on the local library spend on journals."* Only those who are *"involved with learned society publishing"* are aware of the journals financial crisis or care about it.

But widening access through institutional repositories brings a further benefit, namely that a body of well-populated repositories will feed into new services for academics where they can easily <u>find</u> useful content. The primary aim of SHERPA was to create and populate repositories, so it is perhaps unsurprising that the concept of 'academic as information-seeker' does not seem to have caught the advocate's imagination so strongly as 'academic as depositor'. Only in one instance did a Project Officer seem to be aware of this advantage, reporting that when shown a repository home page with a familiar-looking search box *"few academics asked how to find out what is there"*. It may be that promoting this benefit is just beyond the remit of most busy projects; that they are focusing upon their task of filling the repositories, and indeed as one Project Officer remarked there "*needs to be a lot there to be useful".* However, we suggest that promoting the broader vision of what might be achieved in the not too distant future for the information seeker would help to encourage deposit.

Sustainability

As with the Senior Managers, project officers were having to address some challenging attitudes amongst academics regarding the long-term sustainability (both technical and cultural) of their institutional repository. In the absence of a clear institutional mandate for continuity, for example, several had identified a feeling that the repository may not be around in the long term and hence was not yet worth the time and effort required to learn about and contribute to it. *"The repository is still to some extent, perceived as a project and therefore it's difficult to make it very high profile."* Our conversations with academics back this up and suggest a more general issue. They told us that they had *"seen IT projects come and go before",* that the electronic environment *"lacked the robustness of the printed journal",* that *"a book lasts for ever but this will not",* that they *"preferred to read from the printed page"* rather than the screen. Such concerns are widely reported elsewhere and issues of digital curation are being addressed by the SHERPA project and others, so that there is no reason to doubt that an institutional repository would be any less sustainable than other institutional IT systems. But until the future of individual repositories is assured, this remains an issue for potential depositors which may hamper repository development.

What academics think are the benefits of their institutional repository

Lest all of this seem to paint too negative a picture, it is important to say that most of those academics who had deposited publications in their institutional repository, were able to see clear benefits in doing so, and wanted the repository to continue.

Firstly, the repository enhances the University's public presence; *"Our institutional repository is a place for "kite marked research", as all reputable universities (we assume) will be expected to have."* This *"not only provides a service to the academic community, but also enhances the University's own profile and reputation."*

Also, it provides a good service to the individuals who deposit in it, better than a personal website or departmental website because they see 'ownership' of a repository with clear objectives; *"it seems more likely that the repository will be professionally maintained as it has a single purpose, whereas the rest of the institutional websites hover between marketing/advertising and miscellaneous information."*

The repository provides them with a showcase for their work, offering *"a useful role in disseminating their research and also making known their published work in a convenient form."*, and makes their research *"more widely accessible, including to a wider audience"*.

Finally, it provides a service to others in the wider community, by forming *"the basis for a new free to view form of publication, on the web"*, which will be highly visible, properly indexed, and *"make some of their tasks easier."*

5 Conclusion

What lies ahead

SHERPA has undoubtedly met with much success in terms of fulfilling the aims and objectives of the SHERPA project, and of developing new institutional eprint resources for project partner institutions. SHERPA has shown what can be done, and it marks a successful starting point. If the broader vision of a research landscape of which a network of interoperable institutional eprint repositories is an integral part is to be achieved though, the momentum must be taken up by others, maintained and spread.

The initial uncertainties which have been seen among managers and academics in SHERPA institutions are likely to be found elsewhere, and without the hoped for leverage of mandatory deposit being required by government and research councils the development of repositories may not be high on institutional agendas.

Issues of interoperability across multiple institutions will need to be addressed; efficient harvesting services will require national agreement on high quality description and metadata schemas if successful cross-institutional disclosure and retrieval are to be achieved, and duplication of content across repositories will have to be considered. These issues are beyond the scope of the SHERPA project, but must be taken up by the JISC and other interested parties if the vision is to be realised.

Within individual institutions the transition from project to embedded institutional system, the 'fit' with other institutional systems and long-term curation policies remain to be worked through, and this may be a long process. It is hoped that the repositories will become essential components of each institutional landscape, but this is by no means certain in all cases. However, SHERPA has shown what is currently achievable, and has raised awareness and encouraged discussion about the scholarly communication system among its many stakeholders, which should help to move this aim forwards.

What SHERPA has achieved

SHERPA has shown the higher and further education communities the potential which lies in open access publishing and the benefits that an institutional repository has to offer those engaged in academic research.

The SHERPA Project Evaluation

The collective achievements of the SHERPA Development Partners and Associate Partners are considerable, particularly in view of the relatively short lifetime of the Project. Most partners have repositories which are now maturing and some are being embedded in mainstream institutional systems, a few have not yet reached that stage. Whether or not individual repositories continue beyond the project end date, the project as a whole has succeeded in creating

- a range of successfully populated repositories which provide examples of different repository models for other institutions to follow
- a vast store of knowledge and experience on which the wider community can draw, particularly covering issues such as the setting up, managing, populating and maintaining of institutional repositories
- advocacy strategies which work, supported by tools which are well documented and disseminated in a variety of forms, and which can be taken up and used by others in the community
- a clearer understanding of what is needed to motivate managers to support repository development, and to motivate academics to deposit in them
- a deeper understanding of the process of scholarly and research publication and the relationship between author and publisher
- a better understanding of copyright law, and how this applies to the academic institution and its publishing staff
- knowledge of cultural differences in the approach to publication between different subject disciplines
- a model example of collaborative working and mutual support
- a respected profile within the international Open Access movement and with the UK Government

There have been obstacles most of which arise from the newness of the institutional repositories when compared to existing systems; the difficulty of persuading depositors that deposit in a repository is indeed better than 'publishing' on a web page; perhaps most of all the requirement to change cultural attitudes towards a publishing model which, however imperfect, has stood the test of time. The SHERPA Project team has addressed all of these issues with patience, persistence and enthusiasm.

The legacy of the SHERPA project is practical examples of successful working institutional eprint repositories, a wealth of experience and expertise to underpin

future development, answers to some of the theoretical questions, and greater clarity about others which remain as yet unsolved. *"At least"* said one Project Officer *"we have a much better idea now of what the questions are."*

Changing the face of scholarly publication and publishing is a long term and a challenging task, and the 'mountain' metaphor chosen for the SHERPA project has proved most appropriate. We hope that the work carried out for this Evaluation with Project Officers as developers, and academics at SHERPA institutions as end users of institutional repositories will add value to the existing knowledge base.

CERLIM
Centre for Research in Library and Information Management
Manchester Metropolitan University
Department of Information and Communications
Geoffrey Manton Building
Manchester
M15 6LL
Tel: +44 (0)161 247 6142
Email: cerlim@mmu.ac.uk
www.cerlim.ac.uk