



Libraries and research data management - What works?

Recommendations from practitioners

Highlights of the workshop held by the Liber Scientific Information Infrastructures Working Group on 2 July 2014 during the 43rd Annual LIBER Conference on 2-5 July in Riga, Latvia

Introduction

In 2012, the LIBER working group on e-Science formulated '[Ten recommendations for libraries to get started with research data management](#)'. This document has since become one of the most downloaded documents from the LIBER website.

In order to breathe life into the recommendations, the Scholarly Communication and Research Infrastructure Steering Committee collected 11 [research data management case studies](#).

What progress have research libraries made so far? During the workshop held at the 43rd Annual LIBER Conference on 2 July 2014, the lessons learned from these case studies were presented. In addition, the 10 recommendations were assessed by means of a survey. Also, live feedback from the audience was gathered by co-chair Wolfram Horstmann.

Finally, four different takes on how to develop RDM skills were presented. The audience was invited to exchange their personal views in several rounds of "research dating", under the guidance of co-chair Wilma van Wezenbeek.

Case studies

Birgit Schmidt presented (<http://www.slideshare.net/libereurope/sc-scri-rdm-workshop-liber14-bschmidt-20140702>) the lessons learned from the 11 research data management case studies. Here are some of the lessons that were covered:

- Disciplinary data management practice varies. In some fields such as physics and geoscience, data management practices seem to be more developed than in other areas, but in general the researcher community thinks libraries should preserve data and facilitate their access, and would therefore value enhanced support;
- Few, if any, staff have a great deal of confidence in offering advice throughout each phase of the research data lifecycle, although

many individuals have some degree of expertise in particular aspects of RDM;

- Neither technology nor culture change will work independently. The two therefore need to be merged, which represents a new professional space;
- RDM policies are best made within research institutes as they are aware of the different practices and needs;
- RDM services are best developed by holding in-depth conversations with researchers.

Assessing the 10 recommendations

The 10 recommendations to get libraries started with research data management were regrouped into four areas: Support services, Infrastructure & standards, Policy & interdisciplinary practices, Skills & staffing. Rob Grim presented (<http://www.slideshare.net/libereurope/sc-scri-rdm-workshop-liber14-rgrim-20140702>) the results of an explorative survey (n = 21) on institutional engagement in the topics mentioned in the 10 recommendations. The following picture emerged as a result of this:

Institutions are most involved in:

- institutional research data policy development, including resource planning, encouraging and adopting open data policies;
- offering or mediating secure storage for dynamic and static research data in co-operation with institutional IT units and/or seeking exploitation of appropriate cloud services;
- supporting the lifecycle for research data by providing services for storage, discovery and permanent access;
- engaging in the development of metadata and data standards and metadata services.

Institutions were least involved in subject-specific data management practices and promoting research data citation by applying persistent identifiers to research data.

Some additional highlights:

- 40% had participated in some kind of RDM training over the last few years;
- What is missing: more advanced training, hands on data experience and data science skills;
- Institutions note that RDM support services are resource intensive.

Live testing the level of engagement

During the workshop, co-chair Wolfram Horstmann asked the audience for their votes on how engaged they are in terms of each of the 10 recommendations. Holding up a red card indicated that the institution hasn't started yet, while orange meant the first steps had been taken and green meant the institution is engaged and already feeling more confident. When cards were held up, general patterns could be observed. This process was intended to give an overall impression as cards were not counted. The participants then voted on a second question, namely how important each of the 10 recommendations is for future

development. From these live impressions and the ensuing discussions, the following three priorities were devised on which the Scholarly Communication and Research Infrastructures Steering Committee should work in the future:

- I. Policy development;
- II. Helping with data management plans;
- III. Skilling & staffing

Apart from having targeted the main themes the Committee should engage in, the following activity suggestions were made:

- Link the recommendations to best practices. Make a pool of materials;
- Organise workshops on practical issues like writing DMPs and more advanced topics;
- Develop a roadshow concept to engage researchers.

The approach taken should be a very practical one that addresses specific issues in the form of a "How to..."!

	Audience engagement*	Audience mandate**
Support Services		
Offer research data management support, including data management plans for grant applications, intellectual property rights advice and information materials. Assist faculty with data management plans and the integration of data management into the curriculum.		
Support the lifecycle for research data by providing services for storage, discovery and permanent access.		
Get involved in subject specific data management practices		
Infrastructure & Standards		
Engage in the development of metadata and data standards and provide metadata services for research data.		
Liaise and partner with researchers, research groups, data archives and data centers to foster an interoperable infrastructure for data access, discovery and data sharing.		
Promote research data citation by applying persistent identifiers to research data.		
Provide an institutional Data Catalogue or Data Repository, depending on available infrastructure.		
Offer or mediate secure storage for dynamic and static research data in co-operation with institutional IT units and/or seek exploitation of appropriate cloud services.		
Policy & interdisciplinary practices		
Actively participate in institutional research data policy development, including resource plans. Encourage and adopt open data policies where appropriate in the research data life cycle.		
Skills & staffing		
Create Data Librarian posts and develop professional staff skills for data librarianship and integrate data management into the curriculum.		

* the institution's current engagement in this topic

** the engagement the audience would like the Steering Committee Scholarly Communication and Research Infrastructure to have

Incubating skills for RDM support – Training models & lessons learned

In four different takes on how to develop RDM skills, Prof. Sheila Corral, Mari Elisa Kuusniemie, Fabian Cremer and Marina Noordegraaf shared their best practices and recommendations.

Some highlights:

- Sheila Corral defined a family of data scientist roles: data engineer, data analyst, data librarian, data steward, data journalist. She stated that it is important to recognise that they are very different role types. She provided an overview of an elaborate RDM training programme at the University of Pittsburgh with foundational modules, specialisation and suggested electives. Learning by doing is at the heart of every module, e.g. one of the assignments is to develop an RDM roadmap or business case presentation with supporting evidence and documentation;
- Mari Elisa Kuusniemie was the coordinator of an in-house training course for library staff at the University of Helsinki (15 participants, 1 from every library, 10 workshops – 3 hours/session, 1 year in total). The students taught each other by giving presentations after doing desk research. She experienced that researchers are in fact very easy to contact. They are willing to share and it is important to realise you can overcome your fear of getting into contact with researchers by focusing on non-technical questions’;
- Fabian Cremer shared his experiences as an everyday data manager at the University of Goettingen. He addressed the gap between having a data policy and depositing the data and what you can offer in-between. He urged you to offer something that makes a researcher’s day easier. He provided practical tips like ‘Write an Excel script to transform table data’, ‘Search a suitable data centre for a certain dataset’, ‘Evaluate software for image

tagging and annotation’ and ‘Get RDM costs funded together with the project’. He also stated that you should not wait until researchers come to you (be fearless);

- Marina Noordegraaf compared RDM training approaches at the University of Amsterdam, Wageningen University and Research Data Netherlands. Timing is important; if students cannot apply what they learned the next day, a different level of impact will be achieved when compared with applying newly acquired knowledge the next day. A remarkable outcome: At Wageningen University, the contacts made within the faculty to co-create the RDM training for PhD students actually led to a policy change. From 1 April 2014 onwards, every chair group and PhD student is required to have a data management plan.

The presentations can be viewed here:

- Immersive Informatics Education for Research Data Specialists – Prof. Sheila Corral, University of Pittsburgh, School of Information Sciences, (<http://www.slideshare.net/libereurope/corrall-liber-workshop-2-36990191>)
- Training staff for RDM support – Mari Elisa Kuusniemi, University of Helsinki, (<http://www.slideshare.net/MariKuusniemi/training-staff-for-rdm-support-case-helsinki-university-library-36595055>)
- Working with researchers on data management and workflows for archiving and sharing data – Fabian Cremer, University of Goettingen and Max-Planck Society (Collaborative Research Centre on Tropical Rainforest Transformation Systems / Sumatra, Goettingen Centre for Digital Humanities), (<http://www.slideshare.net/libereurope/cremer-embeddedrdmliber14-36990401>)
- [RDM training approaches: What works in the Netherlands](#), Marina Noordegraaf

**‘Don't start with pondering about the role of the library,
start with the facts’ – Mari Elisa Kuusniemie**

Concluding remarks

There is an analogy between becoming experienced and skilful with RDM and learning to swim. You cannot learn to swim from a book, and you cannot really learn to support researchers by visiting a conference. The gap between theory and practice still needs to be bridged. The good news is that librarians do not have to take these steps alone. Look for information, talk to others about best practices, and meet researchers. As Fabian Cremer stated: 'Take an interest in the researchers, look at their research workflow, try to understand it, take a genuine interest in it. That is the key connection'.

In addition to the 10 recommendations from 2012 that focus on interest areas for RDM, we distilled 10 key tips from practitioners which highlight the 'attitude' librarians need to adopt to get ahead.

The organisers of this workshop would like to add that it is never too late for your first research date.

Let's inhabit this new professional space.

*Research dating between co-chair
Wolfram Horstmann and the newly elected
LIBER president Kristiina Hormia-Poutanen*

Scholarly Communication and Research Infrastructures Steering Committee

The activities of the Scholarly Communication and Research Infrastructures Steering Committee are shared [via the LIBER website](#). The members of the committee may be found [here](#), and the members of the working group of Scientific Information Infrastructures are available [here](#).



10 key tips from practitioners on how to get started with research data management

1. Start with the facts (not with 'how things should be')
2. Teach each other
3. Don't wait; get going
4. Focus on opportunities
5. Be fearless
6. Gather good practices
7. Have an interest in researchers and research practice
8. Offer something to make a researcher's day easier
9. Keep on fine-tuning and reinventing
10. Keep on research dating