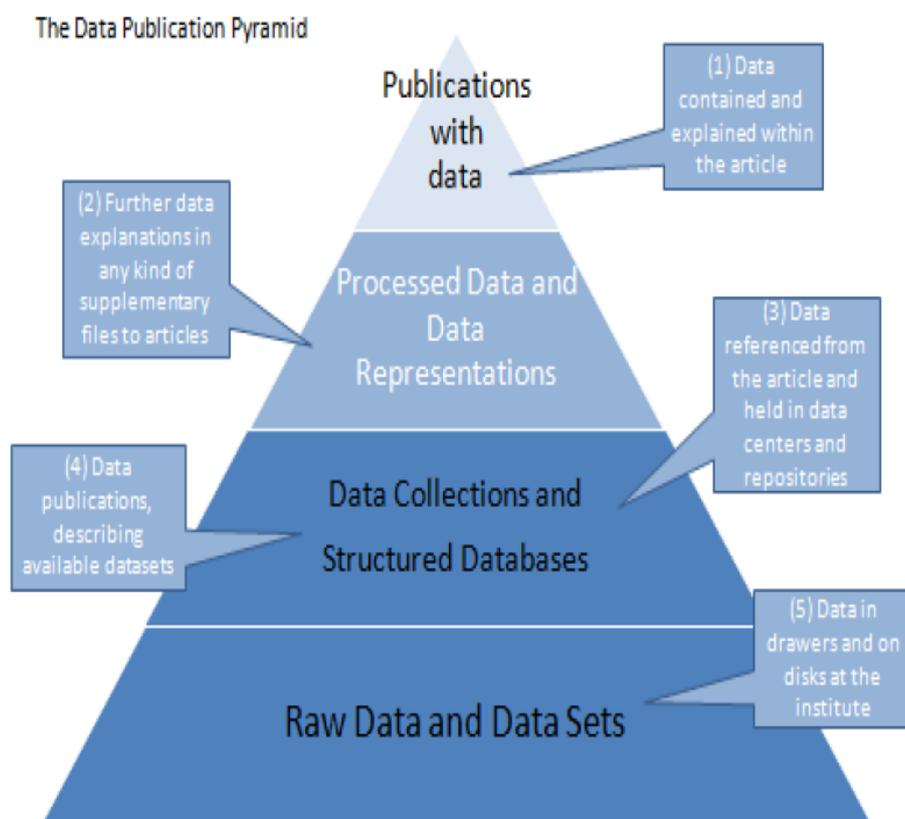# The LERU Roadmap for Research Data

The [LERU Roadmap for Research Data](#) plots a course which [LERU](#) (League of European Research Universities), indeed any research organisation, can choose to follow in order to implement sound research data management practices at institutional level. The Roadmap is divided into 6 chapters, with a list of recommendations to different stakeholder groups being contained in chapter 7.

Chapter 1 looks at the ideas of Policy and Leadership. showing that universities have responded to a greater or lesser degree to data policy directives. It argues that what is needed are institutional data management policies and accompanying Roadmaps for research data management.

Chapter 2 looks at the issues of Advocacy, which the Roadmap identifies as crucial to successful data sharing. The Roadmap identifies incentives and barriers to data sharing, along with suggestions for how to overcome the reluctance of some researchers to share their data. Open research data is advocated as a goal for all researchers, where this is possible. This requires leadership at an institutional level. University support services are well placed to advocate for best practice in research data management and data citation. Advocacy can underline the rewards inherent in data sharing, help to make data visible, increase collaboration and data reuse, and help to build the necessary trust to make all this happen.

Chapter 3 looks at a range of issues involved in the management of research data: Selection and Collection, Curation, Description, Citation and Legal Issues. For selection and curation, the Roadmap takes as its starting point the ODE Data Publication pyramid,[1] and recommends that the research community should undertake further work to identify which of the strata in the pyramid can be made available for sharing and re-use, and which can be open. For data curation, the Roadmap analyses the research workflow and then suggests how the necessary infrastructures can be created. For Description, the Roadmap underlines the difficulties inherent in encouraging researchers accurately to describe their data. For Citation, examples of best practice are cited. The section on Legal Issues analyses the European copyright framework and suggests that an Exception for Text and Data Mining is required to allow

The Data Publication Pyramid

Content Mining in Europe to flourish.

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[1] See http://www.alliancepermanentaccess.org/wp-content/uploads/downloads/2011/11/ODE-ReportOnIntegrationOfDataAndPublications-1_1.pdf.

Chapter 4 looks at research data infrastructure. These infrastructures can be classified into 4 types:

- ➢ research data itself
- ➢ data management tools
- ➢ technical components
- ➢ staffing

Research data infrastructure needs to offer a generic framework to accommodate the wide variety of research activities which will make use of it. An overview of research data management tools is provided and the chapter highlights that the 'long tail' of research data residing on local desktops, hard discs and servers might well comprise a bigger challenge than 'big data'. In terms of technical components, the chapter outlines how these components are distributed across the institution and that, ideally, support services should be organised as a coherent whole.

Chapter 5 tackles the difficult issue of Costs. There is no one single model which can be used to calculate costs. It provides 2 case studies, for the University of Oxford and UCL (University College London) to give indicative costs for service provision. The chapter shows that cost benefits sometimes provide a framework for judging the cost effectiveness of research data curation. It also shows who is likely to meet the costs – research funder, national collaborative service, or the university itself.

Chapter 6 looks at Roles, Responsibilities and Skills. The chapter undertakes an analysis of the different roles needed/involved in research data management and the responsibilities that these postholders have. It suggests that a new concept of Data Scientist has the potential to become a new role in its own right. The chapter also identifies the training requirements needed for a range of participants such as postgraduates/PhD students, senior researchers, librarians and data scientists.
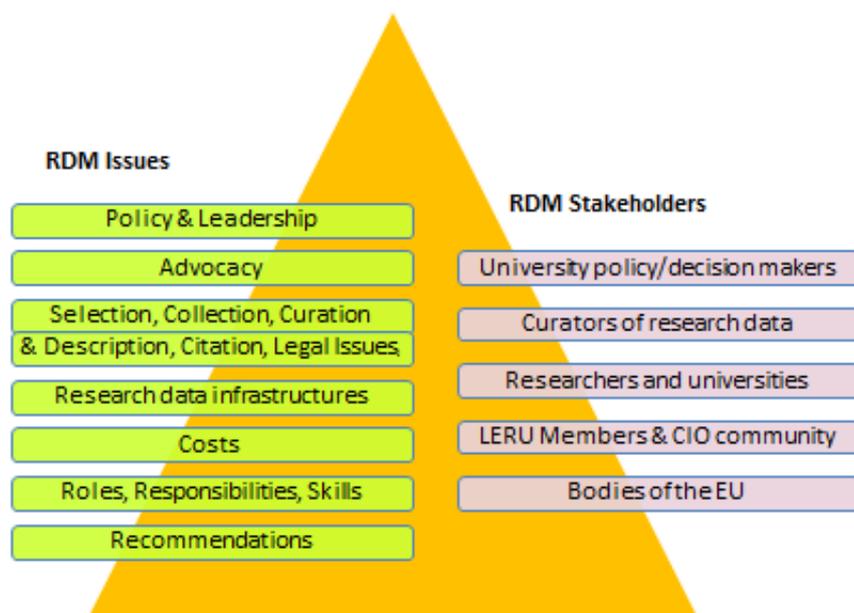
The final chapter, Chapter 7, brings together 44 Recommendations drawn from the Roadmap and allocates them to specific audiences: institutional policy and decision makers, all those involved in the curation of research data, researchers and their institutions, LERU members and the LERU community of Chief Information Officers, and the bodies of the European Union.

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