Once an institution has decided that it needs to act to develop an RDM service bundle to support its researchers, it must determine **HOW** to acquire that capacity. An important task for university and library decision makers is to deploy a mix of internally and externally-sourced RDM services appropriate for local needs and priorities. In other words, **institutions must determine how to source services as well as what scale to offer them.**

**Sourcing**

By sourcing, we mean where RDM services are developed and managed: i.e., locally or by an external provider. For instance, in the fourth report of the *Realities of Research Data Management series*, we describe how four different institutions made different strategic sourcing decisions for their Curation services, ranging from maximizing control by building services internally at Edinburgh to relinquishing some control (but reducing staff support needs) by purchasing a vendor product at Monash.

**Strategic Sourcing of RDM Capacity in Four Case Study Universities**

![Figure 1. “Strategic Sourcing of RDM Capacity in Four Case Study Universities” by OCLC Research, from The Realities of Research Data Management Part Four: Sourcing and Scaling University RDM Services, CC BY 4.0.](image)

**Scaling**

By scaling, we mean at what scale will the services be deployed: i.e., at the level of the institution or at scales above or below the institution.

Generally speaking, RDM services can by offered at the scale of the **campus** (i.e., for general use by a wide spectrum of researchers on campus); at scales **below the campus** (i.e., for use by specific research cohorts on campus); or at scales **above the institution** (i.e., for use by researcher communities that cut across university boundaries).

Each institution must make individual choices in how to implement its own RDM services, and there is no single, best model of RDM service capacity, or a simple roadmap to acquiring it.

![Figure 2. Examples of RDM services at, above, and below the campus level.](image)
When considering HOW to develop RDM services, institutions should consider:

1. What local resources (such as staffing and infrastructure) are available? Needed?
2. Are cooperatively sourced or national provisioned services available?
3. Will capacity be built, bought, or licensed?
4. Is there a willingness and ability to pay for commercially-sourced solutions?
5. Will the local RDM service bundle operate as a complement to, or in parallel with, other services in the broader RDM service ecosystem?
6. Is the institution interested in cultivating institutional prestige around locally built services?
7. Will RDM services address the specialized needs of distinct research cohorts on campus, or will they focus on the general data management needs of the overall campus researcher community?

Consider the array of internal and external resources to develop your RDM Service bundle

Educational services
We've found that most educational resources for RDM are locally sourced, and includes online guides, webinars, workshops, and courses. Although many of these resources are scaled at the campus level, examples of resources aimed at user communities below and above the campus level can be found as well. Some examples of externally sourced, above the campus scale Education resources include:

- The highly-rated Coursera course developed by librarians at the University of North Carolina at Chapel Hill and the University of Edinburgh
- Adaption of LibGuides and other web-based resource guides
- Some publicly funded and/or subsidized organizations like the UK Digital Curation Centre (DCC) and the European Association of Databases for Education and Training (EUDAT) Collaborative Data Infrastructure, offer fee-based educational offerings on a cost-recover basis
- Data Carpentry provides fee-based workshops on a range of data literacy topics in selected disciplines, with an emphasis on increasing researcher competency in active data management
- The self-paced online MANTRA RDM training course, developed by EDINA

Expertise services
Providing expertise services can be costly and exceptionally challenging for institutions, as it requires a knowledge of data curation practices, and – if the services are to be scaled below the campus - expertise with software and domain-specific practices that can vary broadly. Institutions may provide expertise through dedicated data curation staff members, locally-trained subject area librarians, or a distributed network of resources and experts across the institution.

We expect to see growth in externally sourced support for RDM Expertise services; examples include:

- DataQ, a collaborative platform developed by a partnership of US libraries, functions as a virtual call center for questions about research data, scaling RDM expertise to the academic library community at large.
- Formalized RDM expertise-sharing networks such as the Data Curation Network (US), Portage Network of Expertise (Canada), and the Netherlands’ National Coordination Point for Research data Management (LCRDM)
- Collaboratively-developed tools to support data management planning also exist, including the DMPTool (US) and DMPOnline (extensive international community)
Curation services
Curation/infrastructure services are expensive to develop or manage locally, creating strong incentives to leverage shared infrastructure, making them the component of the RDM service bundle most likely to be externalized. As your institution explores how to support curation/technical functions, consider:

- Institutional curation services exist alongside an extensive array of disciplinary data repositories that are widely used by researchers. These repositories are examples of RDM Curation services that are scaled *above the institution* in terms of their intended user communities.
- Consider the existing RDM workflows of your researchers when planning; institutions may find it unnecessary to develop their own data repository services.
- There may now be externalized service offerings that were not available to institutions that adopted earlier. This includes institutional offerings from organizations like figshare, Mendeley Data, and TIND, as well as national efforts such as DANS in the Netherlands. Institutions may also find their needs met by the local existing institutional repository or even the local research information management (RIM) system.
- Interoperability between systems is important for success and consider how this might be needed at scales on, above, and below the campus level.
- Technical interoperability is important but can’t be achieved without intra-institutional relationships to address user needs, requirements, and interoperability at the enterprise level.
- One size does not fit all: each institution needs to customize solutions to fit the local needs of its researchers.

We encourage institutions to consult the 2016 OCLC Research Report *Building Blocks: Laying the Foundation for a Research Data Management Program* for more details and resources.

Discussion questions

1. **What is the mix of internally & externally sourced services in your university service bundle?**
   - Differences in internal/external mix across Education, Expertise, Curation services?
2. **Does your RDM service bundle include services that are scaled:**
   - Below campus?
   - Above campus?
3. **What are the interoperability bottlenecks in your RDM services?**
   - Between local services?
   - Between local and external services?
4. **Do you have all of the information you need to answer these questions?**

Recommended readings
