Research Data Services in European and North American Libraries: Current Offerings and Plans for the Future

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ABSTRACT
As management of research data becomes increasingly important to scholars and academic institutions, academic libraries can play a major role by offering research data services (RDS). This poster presents the results of a survey of the Ligue des Bibliothèques Européennes de Recherche-Association of European Research Libraries (LIBER) academic member library directors to find out what types of RDS their libraries are currently offering and what services they plan to offer in the future. The survey found that while most of these libraries currently offer or are planning to offer at least some RDS, consultative or reference-type services are offered more often than are technical or hands-on services. Most of these libraries are in discussions regarding data policies, collaborate with other organizations within or outside their own institutions to offer RDS, and most provide support for RDS skills development for staff members. This poster discusses the implications of these findings and offers directions for future research.

Keywords
Research Data; Academic Libraries; Data Management

INTRODUCTION
As research funders and government agencies around the world increasingly require data management planning and data deposition of research data (Coates, 2015; Digital Curation Center, n.d; National Science Foundation, n.d.; Office of Science and Technology Policy, 2013; Shearer, 2015; Wellcome Trust, 2010), management of research data is becoming an important part of the work of research. University libraries can play a major leadership role in providing research data services (RDS) to the academic staff and students of their institutions. Libraries face many challenges in doing so, however. They must plan which research data services to provide, who they will collaborate with to offer these services, and how they will ensure that librarians can acquire the necessary skills to offer a range of services (Flores, Brodeur, Daniels, Nicholls, & Turnator, 2015; Kim, 2013; Tenopir, Allard, & Birch, 2012; Tenopir et al., 2015). Additional challenges faced by libraries providing RDS may include coordination of multiple stakeholders, deciding how to allocate often scarce resources to support these new services, and challenges related to the amount and complexity of data and the number of data types that need to be managed (Awre et al., 2016; Borgman, 2015; Cox, Pinfield, & Smith, 2016; Si, Xing, Zhuang, Hua, & Zhou, 2015).

In 2011 and 2014, a sample of North American academic libraries that are members of the Association of College and Research Libraries (ACRL) were surveyed to determine what specific research data services they currently offered and which services they planned to offer in the future (Tenopir et al., 2012; Tenopir et al., 2015). The 2011 survey found that most libraries in the sample did not yet offer RDS, but more were planning on doing so in the future (Tenopir et al., 2012). The follow-up survey found very little change in the percentage of libraries currently offering RDS (Tenopir et al., 2015), with subsequent interviews with library directors suggesting that factors such as lack of time and lack of top-level institutional support. Both surveys found that a greater percentage of larger institutions offered RDS than smaller institutions, and that among those that did offer RDS, more offered consultative or reference-type services than technical or hands-on services.
METHOD
In 2016, the ACRL surveys (Tenopir et al., 2012; Tenopir et al., 2015) were replicated in European academic research libraries that are members of the Ligue des Bibliothèques Européennes de Recherche – Association of European Research Libraries (LIBER). Of the 333 academic LIBER members, 119 responded to at least one question, for an overall response rate of 35.7%. The unit of analysis is the library, with one response per library. With the exception of several opinion questions that concluded the survey, the respondents were asked to answer on behalf of their library. All of the surveys provide insights into the range of research data services currently offered by academic libraries and their plans for offering data services in the future, as well as how academic libraries are meeting staff skill-development challenges.

RESULTS
Research data services can be grouped into two major types: 1) informational/consultative services such as creation of web guides, reference services, and/or consulting with faculty and students; and 2) technical/hands-on services such as creating and maintaining a data repository and/or readying datasets for inclusion in a data repository. Both the North American and European surveys found that research data services are mostly offered in large research libraries and that informational services are much more likely to be offered than technical services.

In the European survey, almost all libraries surveyed currently offer or plan to offer a type of consultative RDS. Over 76 percent currently discuss RDS with others on campus, and over 66 percent are involved in policy development and planning related to RDS (see Figure 1). The majority of libraries either currently offer or plan on offering almost all types of consultative RDS. However, a larger number of respondents have no plans to offer direct participation with researchers on a project, which may be due to the fact that such participation requires a larger time commitment on the part of library staff than other types of consultative RDS.

While fewer libraries currently offer technical or hands-on RDS, a majority are planning to offer these services in the future. The sole exception is deaccessioning of research data (see Figure 2), which may be because libraries are still too early in the process of offering RDS and managing repositories for the need to deaccession data to yet to be a concern.
The finding that fewer libraries are currently offering or planning to offer technical RDS may be explained by the substantial commitment of time and resources offering such services requires, as well as potentially the need for additional technical expertise in order to be able to offer services such as technical support for RDS systems.

As noted previously, differences were also found in RDS offerings by size of institution as measured by full time equivalent (FTE) enrollment. Large institutions were slightly more likely to offer most types of consultative RDS. A key exception is policy development and planning, in which institutions of all sizes were heavily involved (see Table 1).

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**Table 1. Consultative RDS by FTE Count.**

Differences in institution size were less pronounced with technical RDS (see Table 2).
Table 2. Technical RDS by FTE Count.

<table>
<thead>
<tr>
<th>Technical RDS</th>
<th>FTE Size</th>
<th>Yes</th>
<th>No, but plan to</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing technical support for RDS</td>
<td>Up to 9,999</td>
<td>54.2%</td>
<td>20.8%</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>30.8%</td>
<td>43.6%</td>
<td>25.6%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>33.3%</td>
<td>55.6%</td>
<td>11.1%</td>
</tr>
<tr>
<td>Deaccessioning/deselection of data/sets</td>
<td>Up to 9,999</td>
<td>0%</td>
<td>22.7%</td>
<td>77.3%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>13.2%</td>
<td>34.2%</td>
<td>52.6%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>5.7%</td>
<td>31.4%</td>
<td>62.9%</td>
</tr>
<tr>
<td>Preparing data/sets for deposit</td>
<td>Up to 9,999</td>
<td>30.4%</td>
<td>30.4%</td>
<td>39.1%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>23.7%</td>
<td>44.7%</td>
<td>31.6%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>22.2%</td>
<td>55.6%</td>
<td>22.2%</td>
</tr>
<tr>
<td>Creating or transforming meta/data for data/sets</td>
<td>Up to 9,999</td>
<td>33.3%</td>
<td>29.2%</td>
<td>37.5%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>19%</td>
<td>47.6%</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>31.4%</td>
<td>8.8%</td>
<td>20%</td>
</tr>
<tr>
<td>Identifying data/sets</td>
<td>Up to 9,999</td>
<td>24%</td>
<td>44%</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>26.2%</td>
<td>54.8%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>27.8%</td>
<td>47.2%</td>
<td>25%</td>
</tr>
<tr>
<td>Selection of data/sets</td>
<td>Up to 9,999</td>
<td>33.3%</td>
<td>33.3%</td>
<td>33.3%</td>
</tr>
<tr>
<td></td>
<td>10K-24,999</td>
<td>18.9%</td>
<td>48.6%</td>
<td>32.4%</td>
</tr>
<tr>
<td></td>
<td>25,000+</td>
<td>20.6%</td>
<td>44.1%</td>
<td>35.3%</td>
</tr>
</tbody>
</table>

Some libraries that are not currently offering research data services are planning to do so within the next two years or beyond, necessitating collaborating with others in the university or with other libraries, and providing educational opportunities for their library staff members.

For libraries with limited resources, partnering with other organizations within or outside their institutions may allow them to offer research data services, or to expand the range and scope of current services. A large number of libraries currently collaborate with other organizations within their own universities, with the most frequently mentioned collaborators being the university’s IT Center and the Office of Research (see Figure 3).

Fewer libraries are collaborating with organizations from other institutions to offer RDS. Here the most common collaborators were other universities, followed by other not-for-profit organizations, and government agencies and laboratories (see Figure 4).

Along with time and other necessary resources, offering research data management services requires a library to have skilled staff members. Of those who responded to our question on staffing, many libraries have reassigned existing staff to cover research data services (63.5%, 54 of 85) or are planning to do so (30.6%, 26 of 85). Such reassignment may require additional training for staff members to gain specific skills related to providing RDS. Seventy-three of the 87 respondents who answered questions on staff training have provided some opportunities for their existing staff members to develop skills related to RDS. Most common were opportunities provided outside of the library, including support for staff to attend RDS-related conferences and workshops, take RDS-related courses, or join professional working groups related to RDS. Less commonly offered
were in-house staff workshops or presentations (see Figure 5).

In addition to training existing staff members, some libraries are hiring staff specifically for research data services. Thirty-three libraries (38.8% of 85) had hired staff members specifically for RDS in the previous twelve months, and 17 (20% of 85) were planning to do so.

While most questions asked directors to respond on behalf of their institutions, respondents were also asked their own opinions on library involvement with research data services. Directors strongly agreed that librarians should be stewards of all types of scholarship, including data, that losing data and data sets jeopardizes the future of scholarship, and that the library needs to offer RDS to remain relevant (see Figure 6). Levels of agreement were lower for the statement that researchers would be at a disadvantage for funds if the library does not offer RDS, however. For the statement that the library may see decreased funding if it does not offer RDS, mean levels of agreement were even lower, with over half of respondents responding either “Don’t Know” or “Neither Agree nor Disagree,” suggesting that library directors are being required to make decisions about RDS in the absence of full information about how these decisions might impact future funding.

CONCLUSION

Most European academic research libraries that responded to our survey say they are already offering RDS services, and many more are planning to do so in the future. The directors of these libraries recognize the importance of providing research data services to their communities.

We found that most European libraries offer or plan to offer both consultative RDS and technical RDS. However, as was the case for North American libraries in earlier surveys, more European libraries are currently offering or planning to offer consultative services than technical services. This may be because consultative services are more likely to align with a library’s existing reference services and librarians’ existing skills sets, while technical RDS may require additional skill levels, as well as an additional commitment of time and resources on the part of the library and its staff members. This may also reflect the fact that libraries are early in the process of beginning to offer RDS, as the services offered by the most libraries are those that may represent early stage or planning activities, including discussing RDS with others on campus and involvement and policy development and planning related to RDS.

European academic libraries are offering opportunities for staff members to develop RDS skills, with most of these opportunities in the form of support for staff to participate in

Figure 5. RDS Training Opportunities Provided by Libraries.

Figure 6. Library Director Opinions.

Mean Level of Agreement on Scale from 1 = Strongly Disagree to 5 = Strongly Agree
“Don’t Know” Responses Excluded

<table>
<thead>
<tr>
<th>Statement</th>
<th>Mean Level of Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Librarians should be stewards of all types of scholarship, including data sets</td>
<td>4.58</td>
</tr>
<tr>
<td>Losing data/sets jeopardizes future scholarship</td>
<td>4.52</td>
</tr>
<tr>
<td>Library needs to offer RDS to remain relevant</td>
<td>4.51</td>
</tr>
<tr>
<td>Researchers will be at a disadvantage for funds if library does not offer RDS</td>
<td>4.06</td>
</tr>
<tr>
<td>Library may see decreased funding if not offering RDS</td>
<td>3.14</td>
</tr>
</tbody>
</table>

*Note: Mean levels of agreement on a scale from 1 to 5, with 1 = Strongly Disagree and 5 = Strongly Agree.*
training activities and groups outside of the library. Additionally, some libraries are hiring new staff members specifically to provide RDS.

Libraries are also collaborating with others, including other departments within their own universities as well as with other institutions, to help provide RDS.

Library directors in our study strongly agree on the importance of research data services as well as their relevance to the library’s traditional role as a steward of all types of scholarship. A similar level of agreement as to the library’s role was found in the survey of North American library directors. Providing technology and services to support research data preservation and management is a natural extension of this role in an era in which both the amount of research data and the mandates surrounding data management are increasing.

European academic research libraries are at different stages of implementation for providing RDS, and many plan to offer services they have not yet implemented. The provision of RDS is likely to expand and change as libraries begin to implement these planned services and as the overall global data landscape evolves. We hope to do a follow-up study in the future to explore how the provision of RDS has changed and whether RDS has become a more typical part of the daily lives of European academic libraries.

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REFERENCES


