TITLE

Research data management incorporated in a Research Information Management system. A case study on archiving data sets and writing Data Management Plans at Radboud University, the Netherlands

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SUMMARY

Up to recently, Research Information Management systems (RIM/CRIS) were merely administrative systems, with a focus on registering and reporting the output of scientific research.

A few years ago, following recent changes in Open Science, Research Data Management (RDM) and FAIR (Findable, Accessible, Interoperable and Reusable data), Radboud University (Nijmegen, the Netherlands) transformed its RIM/CRIS into a one-stop-shop for researchers. Radboud University's Research Information Management system – the self-built system *Metis/RIS* (http://ris.ru.nl) - from then on included data registration, and, in addition to that, sustainable long-term data archiving in cooperation with the Dutch national and CoreTrustSeal certified DANS EASY archive (https://dans.knaw.nl).

To archive their data, researchers no longer have to use a separated interface, but instead they can register and archive their data at the same time, using the RIM/CRIS as a one-stop-shop. It includes services such as data curation (to guarantee the quality of the data) and making data discoverable (external, in search engines and on profile pages, as well as internal, as management information).

Moreover, Radboud University's CRIS/RIM also serves as a use case for incorporating the writing of Data Management Plans (an important aspect of good data management) into the Research Information Management system, making RIMs/CRISs an inseparable element of the early phases of the Research Life Cycle. This is another major shift in the use of RIMs/CRISs, as in the past, at least at Radboud University, the RIM/CRIS generally only appeared at the end of the Research Life Cycle, to register publications and other output of scientific research.

This presentation will use Radboud University as a good practice of the use of a Research Information Management system in a FAIR data era. It will illustrate that both researchers and research institutes profit from a RIM/CRIS oriented approach to Research Data Management and FAIR data.

EXTENDED ABSTRACT

Nowadays, in the Open Science era, the scientific environment experiences a shift, prompted by the developments in Open Access, Research Data Management (RDM) and FAIR (Findable, Accessible, Interoperable and Reusable) research data. As a consequence, proper registration and archiving of research data has become an important issue in the last decade, both for the reason of scientific integrity and potential reuse of data. Key aspects of Open Science are storage, curation and sharing of research data, and, more importantly, discoverable research data (based on the FAIR principles).

Up to recently, Research Information Management systems (RIM/CRIS) were merely administrative

systems, with a focus on the registering and reporting of the output of scientific research. However, and against this background, in 2016, Radboud University (Nijmegen, the Netherlands) and national Dutch data archive DANS introduced a service to allow researchers to register (metadata) and archive (uploading files) their research data in the university's Research Information Management system (called *Metis*); and, at the same time, making data available for reuse at the DANS archive in a FAIR way.

In addition to an administration and service desk module, *Metis* has a separate online interface for researchers. This interface, called *RIS* (Research Information Services), gives researchers direct access to the registration and management of their research results, among others monographs, articles, annotations, dissertations and lectures. As mentioned, since 2016, this includes the possibility to register and upload data sets, without having to enter metadata twice or having to access the separate DANS EASY interface.

Radboud University's Executive Board stimulated to use the institutional RIM/CRIS as the central system and resource for registering and archiving research data. In 2018, as part of the university's Research Data Management policy, a Data Management Plan (DMP) module was added, allowing researchers to draft and register DMPs via the RIM/CRIS. The DMP module allows institutes to create their own DMP templates, thus adapting them to their institute-specific RDM protocols.

Currently, project registration is included in the RIM/CRIS as well, to suit the full Research Life Cycle. All modules together offer a one-stop-shop for Radboud University's researchers: data registration and archiving, blended with writing DMPs, in addition to registering articles, uploading full text to the publication repository, linking between a variety of scientific output, project registration and the creation of researcher's profile (CV) pages.

The project included an organisational aspect, i.e. support services and workflows on data curation processes, securing the quality of the metadata and documentation of the archived data, thus promoting FAIR research data. A workflow was added to the DMP module, enabling the data stewards and/or central RDM support to provide discipline-specific feedback on DMPs via the RIM/CRIS. As a result, researchers only have to use one administrative system (the RIM/CRIS) and request help, have data curated and ask questions about publication and data management at one service desk (RIS service desk, http://ris.ru.nl), instead of having to use different systems and different communication channels.

This central service desk is an elementary success factor of a RIM/CRIS based online interface as a one-stop-shop solution. At Radboud University, it is an expert team at the University Library that operates the central service desk. Thus, the original publication management services that the library has been providing for many years already have recently been supplemented with the new data management tasks mentioned before; such as, support in the registration of metadata of data sets, assisting researchers in uploading data files for sustainable archiving at the national DANS EASY archive, linking data sets and publications, and offering feedback on Data Management Plans via the DMP module in the RIM/CRIS.

In this presentation, we explain the adjustments to the RIM/CRIS and DANS systems, and the services guaranteeing FAIR data archiving. This latter also includes services on data curation processes, which secure the quality of the metadata and documentation of the archived data. Over the past few years, at Radboud University, the RIM/CRIS was developed to act as a central system in the research information landscape.

We will point to future use cases that put a central role for RIMs/CRISs even earlier in the Research Life Cycle, e.g. at registration of research, data collections and informed consent/ethical approval procedures, as the project continues in 2019, adjusting the RIM/CRIS to the currents need of Research Data Management and FAIR data. We use Radboud University as a good practice of the use of RIM/CRISs in the Research Life Cycle. It will be demonstrated that both for researchers and research institutes, a RIM/CRIS oriented approach to Research Data Management brings added value. The benefit of incorporating Research Data Management in the university's CRIS is that it is placed in

a much broader context, integrating the open science aspects of open access publishing and open data, without having to introduce researchers to yet another system; at Radboud University, at least part of the research staff was already familiar with or even using the RIS interface for researchers.

There are other benefits of incorporating Research Data Management in the university's RIM/CRIS, in addition to using only one administrative system. This includes the external visibility of research output, making metadata and linked publications and data sets visible on the researcher's profile page. But it also entails linking to contextual information, such as research projects and programs, funder information and professional employment history. Research output, including data sets, can thus easily be included in the reports of the university's research institutes.

Finally, a one-stop-shop CRIS solution will also help Radboud University's recently appointed data stewards with implementing a FAIR data policy, making Open Science as feasible as possible.

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