Practical CRIS Interoperability

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Abstract
Institutional Current Research Information Systems typically interoperate and interact with a rich variety of other information systems and services. We aim at providing a basic list and discussing the motivations, the technical aspects of the information interchange that is taking place, and potential benefits of applying CERIF. Our findings are illustrated on the example of a home-built university CRIS with almost two decades of history.

Extended abstract

Specifically, one discusses the interface of an institutional CRIS with:

1. Article-level and citation-level bibliographic databases. The two most prominent services here are the Web of Science by Clarivate Analytics and Scopus by Elsevier, with Crossref growing in importance (with the Initiative for Open Citations to provide citation-level microdata)

2. Journal-level citation metrics sources: The Journal Citation Report by Clarivate Analytics and the Scimago Journal Rankings

3. The institutional repository of full texts of Open Access publications

4. ORCID as a global researcher profile registry

5. Identity Management systems: With their wide user bases, CRISs at higher education institutions need to cooperate with the institutional user account policies and systems.

6. Human Resources information systems to keep track of the kinds of relationships the institution is having with its staff (including the relationships in the past)

7. Finance information system of the institution to keep track of allocated and spent research funds

8. Student management information system to keep track of theses, from the perspectives of the student, the supervisor, a consultant or reviewer

9. The institution's Document Management System to store the funding contracts and other administrative documents related to research

10. Institutional Data Warehouse to monitor research activities in the broader context of the institution

11. Internal Reporting: internal bibliometric reports for evaluations and supportive information for academic promotions (at different granularity levels with different indicators)

12. External Reporting: statistics office, national CRISs and researcher CV systems, OpenAIRE

13. In some cases the university acts a funder: this agenda is either handled in the CRIS itself, or the relevant information needs to be communicated

14. The institution's technology transfer office will have information on license contracts for the institution's applied research and development outputs and on spin-off companies

15. Potentially fruitful is the interface between the institutional CRIS and the CRISs of funding agencies. The current level of integration on this front seems, however, to be very low.

One has to deal with several types of heterogeneity: heterogeneity in the underlying technology, the data model, the semantic gaps, the different processes, of information coming from different sources. This requires the different views to be reconciled, hopefully resulting in a single coherent picture.

A home built CRIS has the advantage of a greater flexibility in setting up interfaces with the neighboring systems, compared to CRIS vendor products. Such interfaces, however, represent a maintenance burden. Their standardization would play a big role in keeping the maintenance costs under a limit of bearability. We will assess the potential of CERIF as the basis of such standardization.