



Research Impact and the Digital Scholarly Record: A Discussion Paper

Prepared by Queen's Digital Scholarly Record Working Group

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This discussion paper seeks your feedback on matters that will frame future support for a key aspect of research and scholarship – the dissemination of results. The Digital Scholarly Record Working Group proposes that a bold statement of principles regarding the dissemination of research results is required to ensure the highest possible impact of research conducted at Queen's University across all disciplines. This is a foundational piece of the university's digital planning, which encompasses research and innovation, the student learning experience, and administrative and support services. This planning explores how to best maximize the potential of digital technologies to advance the university's mission. Your feedback is invited – details are at the end of the document.

The Digital Scholarly Record: A Strategic Imperative

The term “digital scholarly record” refers to the elements needed to understand and replicate research results in the current digital environment. These are:

- Data used as evidence in the research process
- Computer programs and documentation used to generate and manipulate the data set
- Outputs of research and scholarship in digital form (e.g. publications, creative works, digital environments, etc.)

Digital scholarly records are essential in advancing a broad spectrum of research and scholarly activities, including: new discoveries and creative works; scientific and technical breakthroughs; advances in the social sciences and humanities; innovation; institutional reputation; and education and research training of undergraduate and graduate students and post-doctoral fellows.

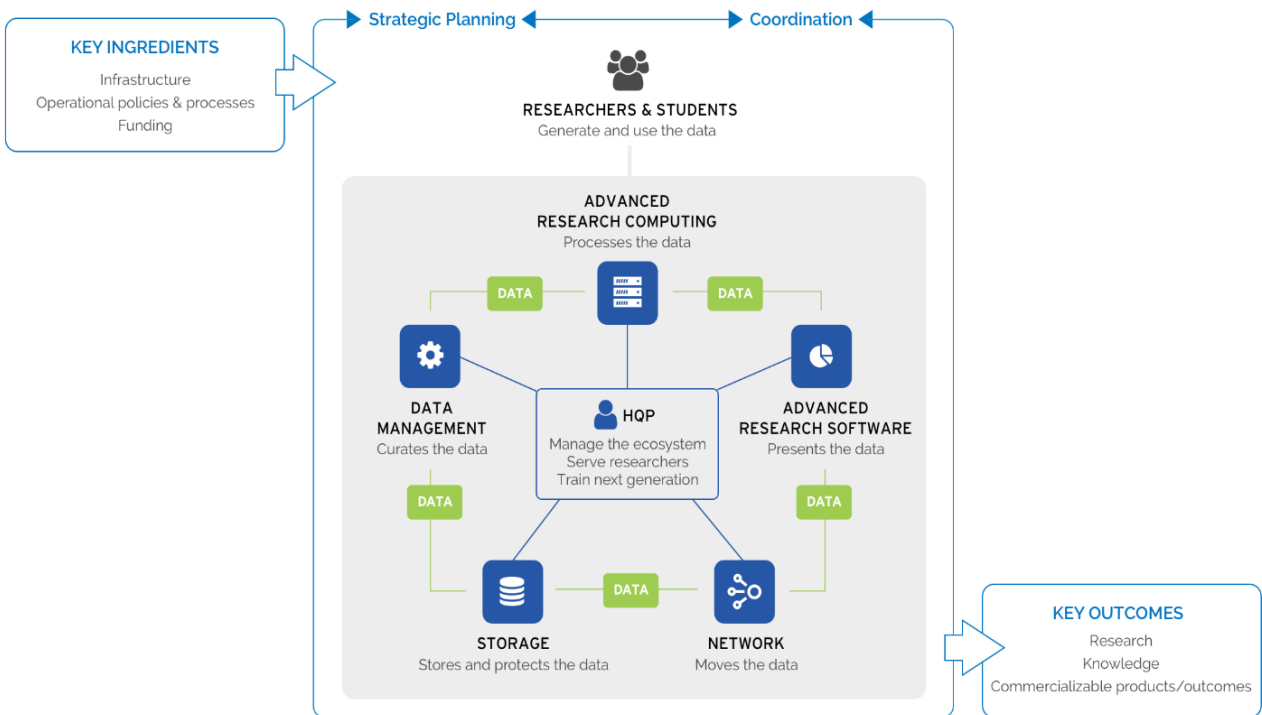
Researchers have a range of needs regarding digital scholarly records. They require access to existing research results, and they want their own works to be as accessible as possible, within any required constraints, in order to have the highest global impact possible and to support reproducibility. Granting agencies are increasingly requiring publications from funded research to be openly available, to encourage accessibility for other researchers but also in recognition that this research is supported by public funding, to which the public should have access.

Researchers currently face two key barriers. Disseminating and accessing key publications in traditional venues is increasingly difficult and unsustainable as costs soar. Moreover, as we have moved from the static records of the print era to the more dynamic and in many ways

more vulnerable records of the digital age, researchers currently need to expend considerable effort to deliberately manage, select and preserve their research data and outputs.

The Digital Scholarly Record: Larger Context

The Digital Scholarly Record exists within a larger context, known as Digital Research Infrastructure (DRI). As illustrated in a recent report from the Leadership Council on Digital Research Infrastructure, DRI *“has five core components: network, advanced research computing, data management, storage, and advanced research software. Analogous to the component parts of any PC or laptop computer, these individual components only function to their true potential when they are integrated to facilitate efficient and effective workflows for researchers and when they are supported by highly qualified staff, who oversee the management of the ecosystem and its direct delivery to researchers.”*¹ In this image, data is a common element across each aspect of the ecosystem. Further, the Leadership Council on Digital Research Infrastructure argues for the importance of strategic planning and coordination around the interconnected data-related activities of the research lifecycle, which include data planning, data creation, data processing, data analyzing, data dissemination, data preservation and data reuse.



The Digital Scholarly Record: Queen’s University Context

These data-related activities require infrastructure, operational policies and processes, and funding, all noted as key ingredients of DRI. Each university needs to determine the levels of

¹ Leadership Council on Digital Research Infrastructure, Coordination Position Paper for Innovation, Science, and Economic Development Canada, November 2017

local support required for each of the five core components of the ecosystem. For the purposes of discussion at Queen's, the Digital Scholarly Record Working Group offers an analysis of the key ingredients using the following locally recognized terms:

1. *Services provided by highly qualified personnel*

A variety of service needs have been determined through recent surveys of Queen's researchers' data management needs across the disciplines. Moreover, we have ongoing experience with supporting scholarly communications, and are aware of existing service offerings through strong relationships amongst relevant service units (Centre for Advanced Computing, IT Services, Library, University Research Services), between those units and each faculty, and through external collaborations. The goal now is to coordinate and right-scale the required services, making them more accessible to more researchers. These services include advice, support and training in:

- Data management planning
- Publishing options, rights management and platforms support
- Researcher identification (ORCID) awareness and implementation
- Metadata and standards supporting interoperability
- Data curation, preservation, discovery, security, integrity privacy

2. *Physical infrastructure*

Many research teams operate their own technical infrastructure, but many others seek the lower risks and other advantages of large-scale offerings. In terms of managing the digital scholarly record, coordinated networked approaches are an absolute necessity to enable the global sharing of research results. This requires:

- Local, regional or disciplinary digital repositories that support interoperability and preservation and can be federated nationally or globally
- Publishing options, such as open journal systems or open repositories, that lower economic barriers and reduce publication timelines
- Advanced research computing that supports all the data-related activities of the research lifecycle
- Reliable, secure, high speed network

3. *Policies*

The human and physical infrastructure discussed above supports the university's strategic priorities and will be guided by its policies.

In the research pillar of [Queen's Strategic Framework](#), the university-wide objective most relevant to the digital scholarly record is:

"Focus on increasing and improving our impact through peer-reviewed publications, recognized scholarly books and creative activities, and knowledge translation and innovation."

The [Queen's Senate Policy on Integrity in Research](#) says that all members of the Queen's University community who are involved in the conduct of research are responsible for:

“making results of work accessible to the scholarly community and general public through the submission for publication, conferences, lectures, public performance and/or other appropriate means” (section 3vi);

“retaining complete and accurate research records, in a manner that will allow verification or replication of the work by others, within their personal control for a minimum of five years from the date of publication or other form of presentation (if appropriate for the data format) or longer if mandated by a legal requirement or an applicable funding or oversight agency. An exception to this would be when for anonymity purposes destruction of data has been approved by a Research Ethics Board at Queen’s.” (section 3viii)

The [Queen’s Research Administration Policy](#) includes in the responsibilities of Principal Investigators and Co-Principal Investigators with regard to administrative data:

“Maintain records and data in accordance with the Research Agreement, sponsor’s funding terms, University policies, Canada Revenue Agency guidelines, and/or best practices of the Principal Investigator’s academic discipline, whichever is more rigorous.”

Digital Scholarly Record: Principles

The Digital Scholarly Record Working Group proposes that the planning and policies supporting the digital scholarly record be guided by a bold statement of principles for the dissemination of research results, in support of improving the impact of research conducted at Queen’s University across all disciplines. We have drafted the following for discussion:

Principles for the dissemination of research results (draft)

Queen’s researchers and scholars aim to generate globally impactful research and scholarship, thus Queen’s gives VOICE to research results according to the following principles:

Value: The university’s evaluation of research impact includes a wide range of qualitative and quantitative measures.

Openness: The results of research and scholarship should be disseminated as widely as possible for the advancement of research and the benefit of society.

Inclusivity: All disciplines, areas of study and human differences are supported and it is recognized that they have unique and particular needs.

Collaborative platforms: The university supports the development and use of distributed, reputable platforms for research dissemination and preservation that reduce cost barriers and are guided by the [FAIR data principles](#) – that data must be Findable, Accessible, Interoperable and Reusable.

Engaged Researchers: The university supports researchers in regaining control of the scholarly communication ecosystem (e.g. by intentionally licensing their publications and other research results so that they retain their ownership while sharing them openly).

Engaging with the services guided by these principles helps Queen’s researchers and scholars ensure that their digital scholarly records are accessible and preserved in a global knowledge commons.

Next steps

Queen's Digital Scholarly Record Working Group is consulting with stakeholders across the disciplines at Queen's to gather input on matters presented in this discussion paper. We would like to hear from you. For example: Are there needs we haven't captured? Do you have suggestions for changes to the proposed principles? What advice do you have for us going forward? Please provide your comments to any member of the working group: see Appendix A for names and contact information.

Our goal is to prepare recommendations for the Vice-Principal (Research) and the Vice-Principal (Academic) and Provost by May 2018, including funding needs to be articulated in budget submissions for the 2019-20 to 2021-22 budget cycle.

Appendix A

Digital Scholarly Record Working Group

- [Terms of reference](#)
- Members:
 - Don Aldridge, Centre for Advanced Computing – don.aldridge@queensu.ca
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 - Martha Whitehead, Vice-Provost (Digital Planning) and University Librarian (Chair) – martha.whitehead@queensu.ca

Related statements

- [Queen’s Senate Policy on Integrity in Research](#)
- [Queen’s Research Administration Policy](#)
- [Queen’s Records Management Policy](#)
- Articles 16 and 17 of the [Collective Agreement between QUFA and Queen’s University](#)
- [Tri-Agency Open Access Policy on Publications](#)
- [Tri-Agency Statement of Principles on Digital Data Management](#)
- [U15 Statement on Sustainable Publishing](#)

Other background materials

- [Queen’s Digital Scholarly Record Working Group page](#)