

THE STRONGEST LINK IN THE CHAIN: INFRASTRUCTURE TO SUPPORT NATIONAL SCHOLARLY JOURNALS



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Abstract:

In the landscape of open access scholarly publishing, digital infrastructure is a critical element for the dissemination of research outputs and the advancement of open science. This article delves into the pivotal role played by Érudit, Canada's national digital research dissemination platform, in supporting open access and fostering research as a common good. Employing the metaphor of "links in a chain," this study explores Érudit's indispensable services for independent scholarly journals in Canada and Quebec. The platform's technical infrastructure, rooted in open technologies and standards, addresses the complex demands of digital scholarly publishing, particularly in the humanities and social sciences.

Highlighting Érudit's 25-year anniversary, the article emphasizes the collaborative efforts which have been instrumental in realizing a non-commercial model for research dissemination in Canada. Examining the concept of common good, the article underscores the need for robust infrastructure as the linchpin in the chain of scholarly communication. It explores Érudit's technical workflows as well as its commitment to diamond open access and to disseminating national and local research. The article also introduces the concept of "human infrastructure", acknowledging the essential role of expertise in digital publishing and information sciences.

The article concludes with a reflection on Érudit's dedication to the common good, emphasizing the importance of sustaining diamond open access publications and open infrastructures. It posits that both elements must be strong links in the chain of research communication for the long-term viability of the diamond open access model. As scholarly publishing evolves, the article calls for continued international collaboration and diversified funding models to ensure the resilience and endurance of these critical components.

Keywords: Érudit, bibliodiversity, bilingual publishing, Canadian research, common good, diamond open access, digital infrastructure, humanities, multilingualism, national journals, open technologies, research dissemination, scholarly journals, scholarly publishing, social science, technical infrastructure, Quebec research.

Introduction

As the international research community increasingly embraces the opportunities and challenges of open science, many elements merit reflection, including the role of digital infrastructure that supports open access. This question was recently considered during a panel at the Global Summit on Diamond Open Access. At the invitation of the summit host Redalyc, Canada's national digital research dissemination platform Érudit shared some thoughts on open science infrastructure as a global common good. In doing so, we were inspired by the overlapping anniversaries Redalyc and Érudit (our 20th and 25th, respectively) and how both of our organizations have worked to uphold common good. Similar to Redalyc, which operates in the Latin American context, Érudit was founded in the French Canadian context with a strong mandate to support la science en français, which remains an important part of our mission today. With a strong focus on the humanities and social sciences (HSS), we now disseminate scholarship in both of Canada's official languages from our office at the Université de Montréal in Quebec. Our 25th anniversary has provided us with an excellent opportunity to reflect on our achievements and our ongoing role as digital research infrastructure designed to support Canada and Quebec's scholarly journals ([Érudit, 2023](#)).

Like many open infrastructures, our strength lies in the many partners who have invested in Érudit over these past two and a half decades, mainly the Quebec universities that form the Érudit Consortium—Université de Montréal, Université Laval, Université du Québec à Montréal—and the government agencies that fund our operations—les Fonds de recherche du Québec—, as well as the Canada Foundation for Innovation and the Social Sciences Humanities Research Council of Canada which support our Coalition Publica partnership with the Public Knowledge Project (PKP) (Érudit, 2022). Without these partners, we would not have been able to pursue our non-commercial model for research dissemination and our values of common good, openness, collaboration, and innovation (Érudit, 2021).

These values and our non-commercial approach have been a considerable asset in expanding the community of journals that we support. The erudit.org platform currently hosts more than 300 scholarly journals, mainly in the HSS. These journals are not-for-profit and scholar-led, and most are supported by academic institutions, scholarly societies, libraries, or small publishers. These journals operate independently, distributed geographically throughout Canada, with many using PKP's Open Journal Systems with support from their university library. A large proportion have already adopted a diamond open access publishing model (Lange & Severson, 2021). Part of their social and scientific significance lies in the fact that they publish research on national topics, which are rarely seen in journals controlled by the large commercial publishers (Larivière, 2018). Part of the reason why Érudit was founded 25 years ago was to support these national publications which allow Quebecois and Canadian researchers to communicate their research findings, particularly in French, and within disciplinary and community networks. In this way, Canadian journals provide the space to consider local issues and questions in both of our official languages, which help us to understand our society and contribute to the public good.

Open Science Infrastructure

As a way of looking at the topic of digital publishing infrastructure as a common good, we would like to use the cliché “a

chain is only as strong as its weakest link.” In terms of supporting diamond open access (OA), we believe that infrastructure should be the strongest link in the chain. For the purposes of this paper, we use the term “common good” (and occasionally “public good”) to mean both a certain interest shared by a community as well as any facilities that serve that shared interest (Hussain, 2018). We also use “infrastructure” and “platform” interchangeably, and specifically in reference to our context of scholarly communications, to denote the basic digital systems which enable individuals to participate in the social and economic benefits of research (Investopedia, 2023). In the case of Érudit, a good deal of what we offer as an open infrastructure are the technical requirements of digital scholarly publishing which individual publications cannot afford or are unable to provide to their users, such as XML production, persistent identifiers, collection management tools, long-term digital preservation, usage statistics, and general indexing. These technologies underpin the erudit.org platform and the content available there, creating a centralized access point to vetted scholarly research content for students, researchers, and members of the general public. In this way, our technical infrastructure enables capacity-building and increases dissemination for Canadian diamond OA journals.

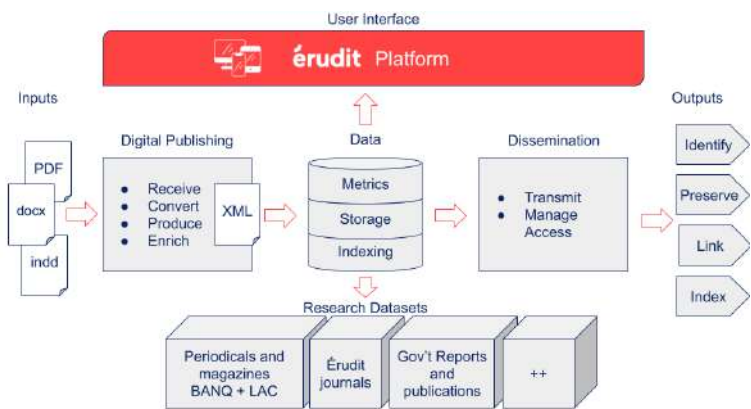


Figure 1. Érudit technical schema

With regards to our technical infrastructure, the workflow begins with the input of files provided by the journals in heterogeneous formats, including Microsoft Word, Adobe InDesign, and PDF (Figure 1). We take this unstructured content and transform it into machine-readable XML, which can then

be indexed in our database and displayed on our platform in HTML and PDF. We invest resources in enhancing the content, for example with persistent identifiers, and making it findable, accessible, interoperable and reusable ([GO FAIR, 2017](#)). These efforts allow us to identify, preserve, link and index the content we disseminate:

- We **identify** content with Crossref digital object identifiers and authors with ORCID;
- We **preserve** our collection with Portico;
- We provide integrations with **link** resolvers and library catalogues through OCLC, EBSCO, ExLibris and others;
- We **index** our journals through dozens of external services, including Google, OpenAIRE, DOAJ, Clarivate, PubMed, Mir@bel, Persée, and others.

Whenever feasible, we use open technologies and technical standards. These include XML production with JATS, as well as EruditArticle, our own open XML schema; Fedora and DSpace for storage; Python and Django to develop our platform; Solr for search and indexing; Elasticsearch/Logstash/Kibana for metrics; and SFTP, OAI-PMH, and SSH for data exchange. We also support international standards for persistent identifiers (DOI, ORCID), usage statistics (COUNTER R5), and collections management (KBART). The choice to use open technologies and standards is part of how we express our values as a publicly-funded infrastructure—just like the content we disseminate, our infrastructure itself is a public good and should be as open as possible.

We also frequently describe Érudit as a human infrastructure because technology requires people to develop, maintain, and operate it. We are fortunate to benefit from the expertise of publishing and information science professionals in addition to that of our developers and technologists. These expert staff members work on projects and partnerships that prioritize activities such as providing guidance on best practices for digital publishing, engaging with and advocating for the community that supports Érudit, and performing research on national and international scholarly publishing. One such project of which we are particularly proud is the Partnership for Open Access (<https://partnership.erudit.org>), our community-governed

model for funding diamond OA publishing, which brings not-for-profit journal publishers and libraries together to shift the focus from legacy commercial models to academy-owned and controlled publications. All of these functions contribute to the strength of Érudit's link in the chain of diamond OA publishing.

Conclusion

We are motivated by a shared desire to contribute to the common good, a value that our team collectively identified in our most recent strategic plan (Érudit, 2021). This key value is at the heart of all our work and is a main reason why we believe that diamond OA is the way forward for scholarly publishing in Canada and around the globe. However, our commitment to the common good also reflects our desire to ensure that the journals we disseminate are sustainable and can continue their essential work of publishing research that reflects the subjects and questions that are most important to Canadian and Quebecois societies, in both French and English.

Open infrastructures such as Érudit provide essential services without which the principles of open access and open science cannot be realized. In this way, they must be the strongest links in the chain of scholarly communication. While there is no doubt that the diamond OA community should prioritize the sustainable funding of open infrastructures, particularly by increasing the number of funding opportunities and extending funding periods, if diamond OA journals become the weakest links in our chain, then our infrastructures will have no role. Initiatives such as the Partnership for Open Access which directly fund diamond OA publications will play just as important a role as open infrastructure. Both open infrastructures and diamond OA publications need to be equally strong links in the chain of research communication in order for the diamond OA to be a viable model for scholarly publishing in the long-term.

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