

A Researcher's Research Agenda for Scholarly Communication in Canada

William F. Birdsall, billbirdsall@accesswave.ca

Kathleen Shearer, Canadian Association of Research Libraries, mkshearer@videotron.ca

Abstract

Despite millions of dollars being spent on research each year in Canada, little attention is paid to the dissemination of the results of research. There is a disconnect between Canadian public policies in this area; although a high priority is assigned to the generation of research, there is a lack of policies addressing its dissemination. Meanwhile, the environment in which research knowledge is being disseminated is undergoing a profound transformation because of several important drivers. In particular, these drivers include new technology, changing research patterns, new users, economics, and commercialization.

The major objective of this study was to examine the rapidly transforming environment in which research knowledge is disseminated and determine whether there is a need for a national research strategy to adapt to the new, dynamic scholarly communication environment in Canada. To address the latter question, the study adopted a consensus panel process. A consensus panel of 10 Canadian academic researchers from across Canada from a variety of disciplines and at different stages of their careers was recruited from over 70 volunteers. The objective of the panel was to reach a consensus on priorities for research into scholarly communication in Canada.

The consensus panel identified five major themes in which there is a need for research in scholarly communication in Canada: Knowledge systems; knowledge/data storage and retrieval; power and infrastructure within the academy; knowledge production and the social contract; copyright and intellectual property. These themes are expanded upon in more detail in the full paper and specific research topics discussed.

The results of this study also clearly support the creation of a more holistic and integrated knowledge ecosystem for scholarly communication. In its report, the consensus panel strongly recommended that, "a coherent national policy of knowledge preservation and dissemination must be devised to create a greater cohesion, accessibility, security and access to research findings."

Keywords: dissemination of research; knowledge dissemination; scholarly communication

Introduction

The dissemination of scholarly research in Canada occurs within a complex system consisting of researchers, publishers, libraries, and public- and private-sector institutions and organizations through numerous modes of dissemination. It also involves the expenditure of significant funds. The term "scholarly communication" refers to the processes by which the results of research, mainly within the higher education sector, are represented, evaluated, edited, formatted, distributed, organized, made accessible and archived. Scholarly communication is often the 'first instance' of the dissemination of research results, after which they may be circulated in society through other means, and also plays an important role in the research process because it ensures that research output is certified and archived.

Scholarly research makes a profound contribution to the social, cultural and economic wealth of a country. The results of research, referred to here as "scholarly knowledge", are created, organized, preserved and disseminated within the scholarly communication system. The Canadian scholarly communication system is just one part of a larger international system that is undergoing profound changes. And, while other countries are undertaking national research strategies aimed at understanding and navigating these changes, Canada is not. In order to optimize the dissemination of scholarly knowledge, it is critical that Canada develop a comprehensive research strategy to examine the future of scholarly communication in this country.

It is not enough for government policies to focus on the generation of research. Another important factor affecting the value of research is the way in which that research is disseminated. For research to have an impact, its output must be shared-whether through publication, the development of new products, or the creation of policies. This increased awareness of the importance of the mechanisms for dissemination has led to the implementation of high-level knowledge dissemination strategies in other countries. These strategies aim to conduct research into scholarly communication and ultimately create what has been characterized as a "ubiquitous knowledge environment," or ecosystem. A ubiquitous knowledge ecosystem represents a holistic research environment in which scholarly communication is integrated into the research process itself. In contrast to these strategies elsewhere, the dissemination of research knowledge in Canada continues to be perceived as an adjunct to research, rather than as an integral part of the research enterprise. In Canada, the strategic emphasis remains on the generation of research, with little attention to its dissemination.

Purpose

The purpose of the study was to examine how knowledge dissemination within the scholarly communication system in Canada is being transformed by a variety of factors (drivers) with the goal of optimizing the Canadian response to the impact of these drivers. The study addressed a number of core research questions:

- What is the current state of scholarly communication in Canada?
- How are external drivers transforming knowledge dissemination within the current system of scholarly communication?
- Is there a need for a specific Canadian research strategy to facilitate the adaptation of the scholarly communication system to this new dynamic environment?
- If so, what should that strategy be?

Methodology

In the past, the majority of studies addressing issues of scholarly communication in Canada have been undertaken by individual consultants or advisory bodies of practitioners (e.g., librarians, scholarly publishers). These studies typically examined only one aspect of the scholarly communication process, such as the adequacy of library collections or funding mechanisms for scholarly publishing. The studies employed traditional methodologies such as on-site visits, questionnaire surveys, or literature reviews and tended to focus on technical or operational issues. And there was often little or no participation by those who produce and consume research—the researchers themselves—other than in a passive informational role.

In order to address the research questions above, the research team chose to employ a methodology that would elicit the input of the major players in scholarly communication in Canada, namely, Canadian academic researchers. The key methodology employed in the study was the consensus conference. The consensus conference has been used extensively outside Canada to allow the general public to participate in public policy formulation relating to critical social and scientific issues, however, it is much less commonly used in Canada, especially in a research context. This innovative methodology was adapted slightly to meet the particular needs of this study and will be partially conducted utilizing web-based communication systems.

In 2002, the consensus panel was recruited and brought together for an initial one-day conference to inform them about the nature of the study and the issues involved. The consensus panel was composed of ten Canadian researchers, reflecting as much as possible the different perspectives of the Canadian research community. The ten panel members were drawn from a pool of over 70 researchers from a range of disciplines and at various stages of the research careers. The following factors will be used to guide the selection of panel members:

- Members from the following each of the following research categories: Research management leaders, gatekeepers, high publishers, researchers at the start of their career, and Ph. D. students.
- In addition to these basic factors, panel members were also be chosen based on their discipline and geography, linguistic and cultural diversity.

The Consensus Panel was provided with background information compiled by the research team. The panel was then brought together for a one-day meeting to identify the major issues in the Canadian context. With the assistance of professional facilitators, the panel established three criteria for selecting and ranking the issues: potential impact, investment required, and uniquely Canadian dimension, and identified six areas of research for further investigation. To this end, the research team organized a series of expert presentations for panel members over a two-day period. Because of the geographic distribution of the panel, these presentations were conducted via teleconference calls. Upon completion of these presentations, the panel was assembled for a final two-day consensus process, again with the assistance of professional facilitators. At the end of these two days, the panel had completed a report articulating five research themes on scholarly communication in Canadian. For each theme, the panel report describes the theme, the desirable outcomes of research on the theme, research challenges, and uniquely Canadian dimensions of the theme. The full panel report is available on the study website. [1]

Results: Five Research Themes

Five research themes were identified by the Consensus Panel in their report. These research themes clearly embody a range of research topics and would constitute a multi-year, multidisciplinary research program. Research in the area of scholarly communication involves

investigations that touch on a variety of disciplines, including library and information studies, computer science, law, public policy, communication studies, economics and linguistics, among others. As such, the research program being put forward here does not obviously fall under the purview of any single granting council in Canada. As well, because scholarly communication is international in scope, the research identified here will have to be done with awareness of and in conjunction with research being done elsewhere. Below is a concise description of the five research themes that were outlined by the panel in their report:

Theme I. Knowledge Systems

Knowledge Systems is used here in an epistemological sense, rather than a technological sense. It refers to the challenge of representing and disseminating different types of knowledge that are created through different knowledge systems while ensuring that points of origin are taken into account. As the panel states:

Creative and scholarly production in Canada takes place in complex cultural, linguistic and regional contexts. The challenges and opportunities of new technologies add an important dimension to this mix. Diverse and unique knowledge and research results must be presented and preserved in various formats without the application of technology that will homogenize this material. Research and creativity take many forms, from theatrical productions to visual arts, from the study of primates to architecture, from investigation by Aboriginal communities to the visualization of microbes. New methods of producing, preserving and accessing this research must take these points of origin into account.¹

The constraints of the current text-based system, of books and journal articles (which may contain a few images and graphs), often create a large "translation distance" between the original expression of knowledge and the expression of the knowledge artifact. Yet, we now have this incredibly powerful technology that does a much better job of representing diverse forms of knowledge, such as those created in the sciences, the arts, and indigenous knowledge systems. However, no corresponding efforts are being made to incorporate into our formal system of scholarly communication these types of creations. So, once this material is created, how do we make sure that it is not only preserved but also properly integrated into the existing system of resources?

Theme II. Knowledge/Data Storage and Retrieval

“Knowledge/Data Storage and Retrieval” refers to the technical problems involved in the storage and retrieval of information. In particular, the panel report highlights the issues of digital preservation. As the panel states: “Digital preservation involves issues such as software and technical obsolescence, standards, interoperability, metadata, information security, rights management in intellectual property, authenticity, system architecture, longevity of the storage medium, and signal degradation. Research on which systems and protocols must be put in place to ensure long-term accessibility is essential on this broad research agenda.”²

Theme III. Knowledge Production and the Social Contract

“Knowledge Production and the Social Contract” refers to the social role of academic research. Quoting from the panel report:

¹ Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.101

² Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.104

Public support of universities implies a social contract in which knowledge created by the academy should be applied to the benefit of Canadians. This social contract works in both directions: scholars must do what they can to ensure that their research has an impact beyond the classroom, beyond the campus, and beyond the scholar's professional and disciplinary community to the Canadian public, and in turn public support must be adequate to support research and teaching, as well as the communication of this knowledge to other scholars and to the community.³

Theme IV. Power and Infrastructure within the Academy

“Power and Infrastructure within the Academy” refers to equity within the scholarly communication system, including issues surrounding research dissemination and access to information resources. In the words of the panel:

Power and infrastructure are unevenly distributed within the academy. There are a number of sources of differentiation within universities and research that have an impact on scholarly production and communication (e.g., the tiering of universities, the hierarchy of disciplines, etc.). In a highly differentiated research environment, and with the pressures on researchers to communicate their research broadly and quickly, issues of access to scholarly research take on a different significance than in the past.⁴

Theme V. Copyright and Intellectual Property

“Copyright and Intellectual Property” are key issues affecting knowledge dissemination in the Canadian academy, particularly in the new digital environment. The lack of resolution of copyright issues has become one of the major barriers to accessibility and preservation of scholarly resources. Copyright law gives a set of rights to the authors of original work. Such rights include the right to reproduce their work, to adapt the work from one form to another, and to publish the work. For many decades a balance between the rights of the public interest and the rights of the creator prevailed (although many would say that this balance is tilted in favour of the creator).

Over the past two decades, copyright law has not kept up with the rapid changes in the scholarly communication system brought about mainly by new technology. As well, the copyright regime does not take into account the unique aspects of the scholarly publishing system—authors expect to receive no financial return for their publications and generally seek to disseminate their publications as widely as possible. This philosophy runs counter to the current publishing model in scholarly communication, where the researcher assigns copyright to the publisher, which then, in the digital age, licenses access to these articles back to the research community.

Discussion of Research Themes

The consensus panel conceptualized the research themes in a very different way than they would have, had the members of the panel been information scientists or librarians, and this is one of the unique contributions of this research study has made to the existing knowledge in the field. There are a number of aspects of the research themes that are worthy of further discussion:

National Strategy

³ Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.106

⁴ Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.109

One important feature of the panel report is the emphasis on the creation of a national strategy: "A coherent national policy of knowledge preservation and dissemination must be devised to create a greater cohesion, accessibility, security, and access to research findings."⁵ The identification of the need for a national strategy in this area is not surprising, as there is no coordinated effort within the Canadian context to support the dissemination of academic research. Given the profound transformation in scholarly communication, ad hoc projects are not sufficient to ensure the creation of an efficient, effective, sustainable Canadian system for scholarly knowledge dissemination. Creating such a system in Canada will require a national strategy for the dissemination of scholarly research in Canada.

Holistic Perspective

The panel does not make a large distinction between the generation of research and its dissemination. Indeed, to understand fully the dissemination of research, it must be viewed as an integrated part of the research enterprise. This is an important and striking aspect of the panel's report. The panel recognized that there is a disconnect between Canadian public policies in this area. And, although a high priority is assigned to the generation of research, there is a lack of policies addressing its dissemination. The need for a holistic strategy in the generation and dissemination of research is reflected in the titles of several of the research themes: Knowledge systems; Knowledge production and the social contract; Power and infrastructure within the academy; Copyright and intellectual property.

Multiple Knowledge Systems

The panel report reflects the epistemological distinctions in research disciplines and scholarly communication and acknowledges that there is no single solution to the challenges transforming it. The panel speaks of "diverse knowledge systems," such as those found within the francophone research community and indigenous communities. It also recognizes the diversity in research cultures, methods and results among disciplines, citing as examples the study of theatrical and visual arts, anthropology, architecture, aboriginal communities, and microbes. Consequently, the report asserts that, "new methods of producing, preserving and accessing this research must take these points of origin into account". It goes on to state that "an efficient, effective and sustainable system of knowledge dissemination" must be based on research into these diverse knowledge systems.

A Canadian Context

The panel report confirms that there is a need for a Canadian national strategy to ensure that scholarly communication processes meet the unique needs of researchers in the Canadian research environment. Specific reference to the Canadian context can be seen throughout the report, in particular, in the recognition of the complexity of Canadian culture. The panel notes that the dissemination and preservation of Canadian research can aid in strengthening our national identity as a culturally diverse country. The report elaborates:

A national policy of disseminating knowledge, recognizing a culturally multifaceted Canada, respecting the communities that have the knowledge and their value systems, integrating these communities into the disseminating process, and making this knowledge freely accessible to all Canadians will certainly help cement Canadians together and contribute to our national identity.⁶

⁵ Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.101

⁶ Anderson, et.al. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [Online]. Available: <http://www.kdstudy.ca/2005/chapter5.pdf>, pp.104

The panel emphasized the fact that a Canadian approach to scholarly communication should be based in the values of Canadian society. This is reflected in the panel's call for a Canadian-based portal; their recognition of the unique funding models for research and development in Canadian academic institutions; and the Canadian legal regime.

The Use and Impact of Academic Research

The panel report devotes considerable attention to the issue of the use of scholarly research. In Theme III (Knowledge Production and the Social Contract), the panel recognizes that there is a gap in our knowledge in this area. There is currently little understanding of whether and/or how much scholarly research impacts on Canadian society. Reflecting a growing trend towards greater public access to research, the panel suggests that Canada support the development of a widely accessible portal to Canadian research and open access programs.

Values-based Approach

Another interesting aspect of the report is the extent to which it is permeated with a strong sense of social values. Throughout the report there are references to access, equity, ethics, authenticity, diversity and accountability. These reflect the traditional ethos of academic research and professional conduct. The panel report also touches on the rights of researchers, the motivations for institutional incentives, the strategic priorities and allocation of granting councils, the role of the arts and humanities, and the question of what constitutes legitimate research. The panel report also captures the ambivalence and concern felt by some in the university research community about the federal government's innovation strategy. In particular, the panel questions the growing commercialization and the popularization of research.

Interrelatedness of Research Themes

The five research themes are not, of course, mutually exclusive. The panel itself, for example, notes the connection between Theme IV (Power and Infrastructure within the Academy) and Theme III (Knowledge Production and the Social Contract). As well, several research problems may fall within the scope of more than one theme and can be addressed from a number of perspectives. Preservation is one example of this potential for multidisciplinary research. Issues of digital preservation are mentioned in three of the themes: Theme I (Knowledge Systems), Theme II (Knowledge/Data Storage and Retrieval) and Theme V (Copyright and Intellectual Property). This highlights the multifaceted research problems involved in the preservation of digital content.

Aside from being a theme in itself, the topic of copyright and intellectual property also underlies issues addressed in other themes.

- Rights management: Theme II (Knowledge/data storage and retrieval)
- Commercialization: Theme III (Knowledge production and the social contract)
- Institutional repositories: Theme I (Knowledge systems)
- Open access: Theme II (Knowledge/data storage and retrieval) and Theme III (Knowledge production and the social contract)
- Institutional incentive and reward systems: Theme III (Knowledge production and the social contract)

Institutional infrastructure is another issue that is spread throughout the themes. Reference is made to the accessibility, role and responsibilities of libraries and to institutional repositories, consortia, governmental funding councils, national institutional associations (e.g., the Association of Universities and Colleges of Canada and the Canadian Association of Research Libraries), universities, and national agencies (e.g., Library and Archives Canada).

Conclusions

These research themes represent the intellectual underpinnings of a research agenda in scholarly communication in Canada. The fact that these research themes were developed by Canadian academic researchers gives this research agenda a significant amount of legitimacy, since they are the major stakeholders in the scholarly communication system. The research team will continue to expand on the panel report by defining specific research problems that might follow from the five research themes.

The results of this study also clearly support the creation of a more holistic and integrated knowledge ecosystem for scholarly communication. The consensus panel strongly recommends that, "a coherent national policy of knowledge preservation and dissemination must be devised to create a greater cohesion, accessibility, security and access to research findings". In the face of the rapid and profound transformation affecting all aspects of knowledge dissemination and the need for an effective knowledge society, it is imperative that the Government of Canada establishes a national strategy of research and development on knowledge dissemination.

The study also concludes with a set of recommendations for a national research strategy on scholarly communication. The recommendations call for the creation and implementation of a multi-disciplinary research program on scholarly communication as a central component of an effective national strategy for knowledge dissemination in Canada. [1]

References

1. Birdsall, William F. and Kathleen Shearer, Robert E. Babe, Jean-Claude D. R. Guédon, Deborah I. deBruijn, J. David Holmes, Bertrum H. MacDonald, Paul McCormick, Ben Schmidt, Gordon Wood. *Towards and Integrated Knowledge Ecosystem: A Canadian Research Strategy*. Canadian Association of Research Libraries, Ottawa, Ontario. January 2005. [Online] Available at: <http://www.kdstudy.ca/results.html>
2. Anderson, Darren and Andrew Applejohn, Hélène Beauchamp, Richard Cunningham, Karen R. Grant, Donald Jamieson, Beverly Lemire, Richard S. Rosenberg, Guy Tremblay, Cora Weber-Pillwax. *Towards a Canadian Research Strategy: Report of the Consensus Panel*, Halifax, Nova Scotia. May 2004. [Online] Available at: <http://www.kdstudy.ca/2005/chapter5.pdf>