EXECUTIVE SUMMARY

LEADING IN THE DIGITAL WORLD: OPPORTUNITIES FOR CANADA’S MEMORY INSTITUTIONS

The Expert Panel on Memory Institutions and the Digital Revolution
LEADING IN THE DIGITAL WORLD: OPPORTUNITIES FOR CANADA’S MEMORY INSTITUTIONS

The Expert Panel on Memory Institutions and the Digital Revolution
THE COUNCIL OF CANADIAN ACADEMIES
180 Elgin Street, Suite 1401, Ottawa, ON, Canada K2P 2K3

Notice: The project that is the subject of this report was undertaken with the approval of the Board of Governors of the Council of Canadian Academies. Board members are drawn from the Royal Society of Canada (RSC), the Canadian Academy of Engineering (CAE), and the Canadian Academy of Health Sciences (CAHS), as well as from the general public. The members of the expert panel responsible for the report were selected by the Council for their special competencies and with regard for appropriate balance.

This report was prepared for the Government of Canada in response to a request from Library and Archives Canada. Any opinions, findings, or conclusions expressed in this publication are those of the authors, the Expert Panel on Memory Institutions and the Digital Revolution, and do not necessarily represent the views of their organizations of affiliation or employment.

Library and Archives Canada Cataloguing in Publication
Leading in the digital world: opportunities for Canada’s memory institutions / The Expert Panel on Memory Institutions and the Digital Revolution.

Issued also in French under title: À la fine pointe du monde numérique.

Includes bibliographical references and index.

Issued in print and electronic formats.


Z701.3.C65LA3 2015 025.8’4 C2014-908450-1
C2014-908451-X


Disclaimer: The internet data and information referenced in this report were correct, to the best of the Council’s knowledge, at the time of publication. Due to the dynamic nature of the internet, resources that are free and publicly available may subsequently require a fee or restrict access, and the location of items may change as menus and web pages are reorganized.

© 2015 Council of Canadian Academies

Printed in Ottawa, Canada
The Council of Canadian Academies

Science Advice in the Public Interest

The Council of Canadian Academies (the Council) is an independent, not-for-profit organization that supports independent, science-based, authoritative expert assessments to inform public policy development in Canada. Led by a 12-member Board of Governors and advised by a 16-member Scientific Advisory Committee, the Council’s work encompasses a broad definition of science, incorporating the natural, social, and health sciences as well as engineering and the humanities. Council assessments are conducted by independent, multidisciplinary panels of experts from across Canada and abroad. Assessments strive to identify emerging issues, gaps in knowledge, Canadian strengths, and international trends and practices. Upon completion, assessments provide government decision-makers, researchers, and stakeholders with high-quality information required to develop informed and innovative public policy.

All Council assessments undergo a formal report review and are published and made available to the public free of charge in English and French. Assessments can be referred to the Council by foundations, non-governmental organizations, the private sector, or any level of government.

The Council is also supported by its three founding Member Academies:

The Royal Society of Canada (RSC) is the senior national body of distinguished Canadian scholars, artists, and scientists. The primary objective of the RSC is to promote learning and research in the arts and sciences. The RSC consists of nearly 2,000 Fellows — men and women who are selected by their peers for outstanding contributions to the natural and social sciences, the arts, and the humanities. The RSC exists to recognize academic excellence, to advise governments and organizations, and to promote Canadian culture.

The Canadian Academy of Engineering (CAE) is the national institution through which Canada’s most distinguished and experienced engineers provide strategic advice on matters of critical importance to Canada. The Academy is an independent, self-governing, and non-profit organization established in 1987. Fellows are nominated and elected by their peers in recognition of their distinguished achievements and career-long service to the engineering profession. Fellows of the Academy, who number approximately 600, are committed to ensuring that Canada’s engineering expertise is applied to the benefit of all Canadians.
The Canadian Academy of Health Sciences (CAHS) recognizes individuals of great achievement in the academic health sciences in Canada. Founded in 2004, CAHS has approximately 400 Fellows and appoints new Fellows on an annual basis. The organization is managed by a voluntary Board of Directors and a Board Executive. The main function of CAHS is to provide timely, informed, and unbiased assessments of urgent issues affecting the health of Canadians. The Academy also monitors global health-related events to enhance Canada’s state of readiness for the future, and provides a Canadian voice for health sciences internationally. CAHS provides a collective, authoritative, multidisciplinary voice on behalf of the health sciences community.

www.scienceadvice.ca
@scienceadvice
Expert Panel on Memory Institutions and the Digital Revolution

Doug Owram, FRSC (Chair), Professor and Former Deputy Vice-Chancellor and Principal, University of British Columbia Okanagan Campus (Kelowna, BC)

Sebastian Chan, Director of Digital and Emerging Media, Smithsonian Cooper-Hewitt National Design Museum (New York, NY)

C. Colleen Cook, Trenholme Dean of Libraries, McGill University (Montréal, QC)

Luciana Duranti, Chair and Professor, Archival Studies, School of Library, Archival and Information Studies, University of British Columbia (Vancouver, BC)

Lesley Ellen Harris, Copyright Lawyer, Consultant, Author, and Educator; Owner, Copyrightlaws.com (Washington, DC)

Kate Hennessy, Assistant Professor, School of Interactive Arts and Technology, Simon Fraser University (Surrey, BC)

Kevin Kee, Associate Vice-President Research (Social Sciences and Humanities); Canada Research Chair in Digital Humanities, Brock University (St. Catharines, ON)

Slavko Manojlovich, Associate University Librarian (Information Technology), Memorial University of Newfoundland (St. John’s, NL)

David Nostbakken, President/CEO of Nostbakken and Nostbakken, Inc. (N + N); Instructor of Strategic Communication and Social Entrepreneurship, School of Journalism and Communication, Carleton University (Ottawa, ON)

George Oates, Director, Good, Form & Spectacle (San Francisco, CA)

Seamus Ross, Dean and Professor, iSchool, University of Toronto (Toronto, ON)

Bill Waizer, SOM, FRSC, Professor of History and A.S. Morton Distinguished Research Chair, University of Saskatchewan (Saskatoon, SK)

Barry Wellman, FRSC, Professor Emeritus, Department of Sociology, and Co-Director of NetLab Network, iSchool, University of Toronto (Toronto, ON)
Message from the Chair

As an exercise, identifying the best opportunities for memory institutions at a time of rapid technological and social change is inevitably fraught with uncertainty. What is possible and promising now could be completely undermined by unforeseen developments in the near future. This, however, is what the Expert Panel on Memory Institutions and the Digital Revolution was tasked to do, and for good reason. Memory institutions and other organizations that find themselves on the front lines of digital change must continuously determine which opportunities warrant investment regardless of the uncertainty.

As challenging as it is to identify the best opportunities amid a digital revolution, the Expert Panel, comprised of leading experts from a broad range of disciplines, had the advantage of having the time to engage with one another in rigorous and insightful deliberations over the course of a year. The result has been very encouraging. Indeed, though it became clear that memory institutions must step up to the challenges of the digital age lest they become culturally obsolete, the benefits of doing so are significant. It also became clear that, in the digital age, the commonalities among memory institutions are now outweighing the differences. Thus, while important distinctions remain, memory institutions collectively share many fundamental problems, the solutions to which require that they work together across sectors to deliver what Canadians now expect.

It has been a pleasure and privilege to chair this Panel. I am very grateful to my colleagues on the Panel who contributed their time and effort to ensure the depth and quality of the report. We hope the resulting effort will be useful in helping inform the decision-making and policies of memory institutions as they navigate the myriad of digital opportunities and related challenges.
On behalf of the Expert Panel, I thank Library and Archives Canada and Treasury Board Secretariat of Canada for asking the Council to undertake this assessment, and the expert peer reviewers who set aside the time to critique the report and help ensure its comprehensiveness, accuracy, and balance. I would also like to extend my thanks to the Council’s project team for its excellent work and support throughout the assessment. And, not least, special thanks to Heather Gordon for organizing an informative tour of the City of Vancouver Archives.

Doug Owram, FRSC
Chair, Expert Panel on Memory Institutions and the Digital Revolution
Project Staff of the Council of Canadian Academies

Assessment Team: Tijs Creutzberg, Program Director
Jennifer Bassett, Research Associate
Andrea Hopkins, Program Coordinator
Jody Cooper, Researcher
Aatif Baskanderi, Intern
Cyril Adjeitey, Intern

With assistance from: Deborah Holmes, Editor
Clare Walker, Copyeditor
Benoît Thouin, Translator, En-Fr, TETRACOMM Inc.
Mary-Christine Thouin, Editor, French, TETRACOMM Inc.
Accurate Design & Communication, Report Design
Report Review

This report was reviewed in draft form by the individuals listed below — a group of reviewers selected by the Council of Canadian Academies for their diverse perspectives, areas of expertise, and broad representation of academic, industrial, policy, and non-governmental organizations.

The reviewers assessed the objectivity and quality of the report. Their submissions — which will remain confidential — were considered in full by the Panel, and many of their suggestions were incorporated into the report. They were not asked to endorse the conclusions, nor did they see the final draft of the report before its release. Responsibility for the final content of this report rests entirely with the authoring Panel and the Council.

The Council wishes to thank the following individuals for their review of this report:

**Greg Bak**, Assistant Professor, Department of History, University of Manitoba (Winnipeg, MB)

**Marion Beyea**, Director of the Provincial Archives of New Brunswick (Retired); Owner and Director, Research and Records (Fredericton, NB)

**Graham Carr**, Vice-President, Research and Graduate Studies, Concordia University (Montréal, QC)

**William LeFurgy**, Digital Initiatives Program Manager (Retired), Library of Congress (Takoma Park, MD)

**Andrew Feenberg**, Canada Research Chair in Philosophy of Technology; Professor, School of Communication, Simon Fraser University (Burnaby, BC)

**Michael Seadle**, Dean, Philosophische Fakultät 1 (Humanities Faculty 1) Humboldt-Universität zu Berlin (Berlin, Germany)

**Melissa Terras**, Professor of Digital Humanities, UCL Centre for Digital Humanities, University College London (London, United Kingdom)

**Jon Voss**, Historypin Strategic Partnership Director, We Are What We Do (San Francisco, CA)

**Ian E. Wilson, C.M.**, Special Advisor, Office of the Director General, National Archives of the United Arab Emirates (Abu Dhabi, United Arab Emirates)
The report review procedure was monitored on behalf of the Council’s Board of Governors and Scientific Advisory Committee by Margaret Conrad, O.C., FRSC, Professor Emerita, Department of History, University of New Brunswick (Fredericton, NB). The role of the Report Review Monitor is to ensure that the Panel gives full and fair consideration to the submissions of the report reviewers. The Board of the Council authorizes public release of an expert panel report only after the Report Review Monitor confirms that the Council’s report review requirements have been satisfied. The Council thanks Professor Conrad for her diligent contribution as Report Review Monitor.
Executive Summary

Canada is now a digital society. Decades of evolving digital technologies have changed how we interact, the amount of cultural content we create and exchange, and the methods we use to create and exchange this content. This reality has profoundly affected the established ways in which memory institutions, such as libraries, archives, museums, and galleries, have been managing Canada’s documentary heritage for future generations. Indeed, the sheer volume of digital content necessitates new ways of locating, maintaining, and accessing digital holdings that must coexist alongside the continued need for the preservation of non-digital content.

To help better understand and navigate this period of change, Library and Archives Canada asked the Council of Canadian Academies (the Council) to undertake an assessment of memory institutions in the digital age to answer the following question:

*How might memory institutions embrace the opportunities and challenges posed by the changing ways in which Canadians are communicating and working in the digital age?*

Additional direction was provided in four sub-questions:

- With the use of new communication technologies, what types of records are being created and how are decisions being documented?

- How is information being safeguarded for usefulness in the immediate to mid-term across technologies considering the major changes that are occurring?

- How are memory institutions addressing issues posed by new technologies regarding their traditional roles in assigning value, respecting rights, and assuring authenticity and reliability?

- How can memory institutions remain relevant as a trusted source of continuing information by taking advantage of the collaborative opportunities presented by new social media?

To address these questions, the Council appointed a multidisciplinary expert panel (the Panel) with expertise in archiving, history, digital humanities, management of memory institutions, digital technologies as they relate to cultural content, and law. In preparing the report, the Panel drew upon evidence from a wide range of traditional and non-traditional sources with the goal of
providing guidance to decision-makers concerned with the long-term success of Canadian memory institutions, both large and small. To encompass the range of new practices and services at the leading edge of a rapidly moving digital frontier, the Panel used non-traditional sources of information documented in specialized blogs and other social media to complement peer-reviewed literature. International examples from countries whose memory institutions have been at the forefront of adapting to the digital landscape were also valuable.

**MAIN FINDINGS**

To keep pace with the fundamental and unavoidable digital change now reshaping society, Canada’s memory institutions must exercise their capacity to be leaders.

Effective institutional leadership that embraces the digital society and its opportunities can help guide change in all aspects of memory institutions’ operations, both technical and managerial. Without such leadership, the digital challenges will only get bigger. While digital strategies will vary by institution, the response to the digital world must be fully integrated into management decisions in all cases.

Facilitating the change requires an integration of human resource capabilities, bringing together established disciplinary knowledge and expertise with technical skills and legal knowledge, and a substantial refocus of resources to ensure positive digital outcomes. At a time of limited resources, digital priorities invariably compete with other corporate functions. All memory institutions can benefit from a significant rebalancing of these resources, one that recognizes the importance of digital initiatives and how they can augment other corporate functions.

Many of the challenges that memory institutions face as they attempt to adapt to the digital age are rooted in technical issues associated with managing digital content, the sheer volume of digital information, and the struggle to remain relevant.
Although the digital environment creates some new challenges for memory institutions, many of the challenges relevant to non-digital materials are amplified in the digital world for the following reasons:

- **Technical challenges** — Unlike non-digital material, digital entities can only be experienced when they are processed by technology, which becomes obsolete quickly. Memory institutions are challenged with preserving files in formats that will remain accessible over the long term. Technical challenges have important legal ramifications for archives, since they are trusted to preserve records that may be used in lawsuits, human rights inquiries, and other investigations.

- **Volume of information** — For archives in particular, deciding which records to preserve is made more difficult by the growing amount of material to appraise, including content created by the public using web-based tools such as blogs and YouTube.

- **Relevance** — Users now expect information to be available from online search engines such as Google. Thus memory institutions are becoming increasingly aware that they are not central web destinations for information seekers. The copyright laws that memory institutions must follow in their daily activities are not always relevant for the digital age.

While these challenges may appear daunting, memory institutions can take advantage of the opportunities created by the digital age. Cultural shifts and technical advantages can also help memory institutions adapt to the digital environment and maintain relevance.

The digital world has the potential to fundamentally change the relationship between memory institutions and people for the better. The integration of a participatory culture into the daily operations of memory institutions will ensure that they establish a sustainable, authentic relationship with the public.

New technologies are allowing memory institutions to redefine their relationship with users in ways that increase their participation and engagement in a range of institutional activities related to documentary heritage. If done successfully, the Canadian cultural landscape can be transformed in important ways. By establishing meaningful relationships that foster trust between institutions and users, memory institutions can leverage both skilled and non-skilled input from citizens while providing them with enhanced and valued experience.
Building relationships is especially important for memory institutions that steward Aboriginal cultural heritage and archival records. Meaningful collaborations between Aboriginal communities and museums aimed at increasing digital access to, and engagement with, cultural heritage may play a role in broader efforts at reconciliation.

Memory institutions are beginning to realize that digital projects, which may be national or even international, must establish firm roots in the community in order to succeed. For example, the Digital Public Library of America (DPLA) manages a project that involves training local librarians in digital technologies. The librarians will use their new skills to help community members digitize their personal materials, thereby enriching DPLA holdings with local content.

Once memory institutions forge relationships with community members, they can more easily engage citizens in various participatory projects. These projects benefit both the institutions (e.g., by enhancing the content or descriptive data of collections) and the public (e.g., by providing them with unique experiences). Dedicated expert volunteers may even design software programs that enhance the day-to-day functions of memory institutions or create innovative applications that encourage further input from the public.

Collaboration is essential for adaptation. It allows memory institutions to access resources vital for delivering enhanced services that users now expect in the digital age.

Through collaboration, memory institutions can access the breadth of knowledge, skills, and technical infrastructure that underpin both core and specialized services. This allows them to carry out their main functions much more efficiently. For example, collaboration can make core services more convenient for users, reduce the workload for individual institutions, and increase standardization of policies and digital platforms.

In addition to accomplishing these more practical goals, collaboration can provide unique opportunities for the public that would not be possible if memory institutions acted alone. Through collaborations with private companies and academia, memory institutions can become involved in exciting activities that enhance their visibility and undertake large projects that require additional resources. Memory institutions can cultivate trusting relationships and create rewarding experiences for both themselves and their diverse users by collaborating with various communities. These relationships can pave the way for future collaborations and engagement in participatory opportunities. An integral concept for the success of many of these collaborative strategies is openness.
Knowledge sharing, innovation, and further collaboration are enabled when programmers make their software open source and when memory institutions release data under open licences. Countries that have provided cultural data to their citizens and encouraged reuse of data through activities such as contests have demonstrated the benefits of this approach.

For collaborations to be successful, however, memory institutions must be conscious of the need to manage reputational and other risks associated with collaborations and to gain proper credit for their role and contribution.

**BENEFITS OF BEING DIGITAL**

The digital opportunities of today demand collaboration and information sharing. In lowering barriers to collaboration and enabling more complex services, digital technologies provide memory institutions with an exceptional opportunity to engage a wider set of culturally relevant, but geographically dispersed, communities. Memory institutions would benefit by becoming more vocal participants in the current national debate on digital infrastructure, given its potential to support the acquisition and preservation of digital heritage. Such participation would ensure that their needs, along with those of the wider public, are represented.

Leading digitally is also about keeping pace with expectations. In all facets of our lives, we expect citizen-centric services to seamlessly interact with how we use and access digital material and information every day. If documentary heritage is to be used in the shaping of Canada’s culture, it must be digitally discoverable and accessible. Expanding presence in these digital spaces is therefore important for future relevance.

Canada’s memory institutions are historically contingent: Library and Archives Canada dates back to the establishment of the Dominion Archives in 1872 and the National Library of Canada in 1953. The digital environment of the 21st century is a different time and place. Despite the recognized limitations and responsibilities of governments and institutions, the internet, a worldwide repository of documentary material, is fast becoming its own archive. In the past, we could only read one book at a time. Today, we can use machines to “read” millions of books, examine thousands of artefacts, or wade through a myriad of records at once. New understandings and interpretations will emerge from these new ways of accessing information. It is an exciting moment, and Canada’s memory institutions have an opportunity to show leadership and shape the way in which we remember, now and in the future.