

- searchable PDF generation
- generation of other derivative formats, e.g., e-books
- cataloguing
- loading and indexing into a secure repository
- hosting
- Web discovery portal development
- Web portal hosting
- collection hosting
- TDR preservation services
- backup services for other repositories
- consulting services on all aspects of workflow, technology planning, and support for digitization, preservation, and access.

Digital heritage has significant financial, cultural, and scientific value, and preservation is important to current and future generations of researchers, academics, educators, and the general public. Government grants for digitization projects can offer an excellent funding opportunity, but they are relatively scarce and are often linked to specific event-related initiatives. They seldom support the long-term preservation of digital repositories. Not-for-profit organizations can both operate efficiently and receive compensation for services, including harvesting heritage assets, preserving, making accessible, repurposing for copy-on-demand and curated collections, operating subscription services for closed collections, and providing optional premium services for open collections.

Collaborations and creative new relationships among collection holders (archives, libraries, and museums) with government and commercial stakeholders may be the best strategy for creating, maintaining, and providing access to repositories of digital heritage content.

Making an Archival Golden Age in the Changing World of Digital Scholarship

CHAD GAFFIELD, FRSC

Professor, Department of History, and Research Chair in Digital Scholarship, University of Ottawa
 President, Social Sciences and Humanities Research Council of Canada (2006–2014)

Not that long ago, archives played a small and specialized role in preserving the official and unofficial record of human experience in specific jurisdictions or on specific topics. In this role, archives supported “unhurried burrowing” by a modest number of historians, amateur and professional researchers, and, to some extent, government officials and business employees.²

Today, archives also underpin dynamic private enterprises, celebrity-based television shows, and international networks that transcend established geopolitical boundaries. To an unexpected and unprecedented extent, historical documents are now the focus of attention in homes, businesses, and institutions in countries around the world. Moreover, such documents inspire robust online interactions and transactions thanks to intense and increasing digitization projects enriched by linkage of archival records and analytic tools.

So why are we not experiencing a golden age for archives? Why, instead, is there widespread concern, evident in the launch of a formal assessment of “Memory Institutions and the Digital Revolution” by the Council of Canadian Academies and “The Status and Future of Canada’s Libraries and Archives” by a Royal Society of Canada expert panel?³ In other words, how can we explain the increasing public and private awareness and interest in the archival record at the same time as leading scholars and public-policy makers are



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- 1 Many thanks to Ian Wilson and Melissa Dubreuil for their comments on an earlier version of this paper.
- 2 Peter A. Baskerville and Chad Gaffield, “Shifting Paradigms and Emergent Technologies,” in *Archives, Automation, and Access: Proceedings of an Interdisciplinary Conference at the University of Victoria, Victoria, British Columbia, 1–2 March 1985*, ed. Peter A. Baskerville and Chad Gaffield (Victoria: University of Victoria), 1985.
- 3 See the website of the Council of Canadian Academies: Assessments, “Memory Institutions and the Digital Revolution,” forthcoming, <http://www.scienceadvice.ca/en/assessments/in-progress/memory-institutions.aspx>; see also the website of the Royal Society of Canada, the Academies of Arts, Humanities and Sciences of Canada: Expert Panels, RSC Expert Panel Reports, “The Status and Future of Canada’s Libraries and Archives,” forthcoming, <http://rsc-src.ca/en/expert-panels/rsc-reports>.

becoming more preoccupied than ever about the current state of, and future prospects for, archives? And, more importantly, what can we do to build upon the good aspects of the dramatic changes now underway, and to eliminate or manage the negative aspects to make an archival golden age in the changing world of digital scholarship?

Over the years, I have frequently focused on these questions in the context of the interrelationships of archives, archivists, and historians – what Jean-Claude Robert called in his presidential address to the Canadian Historical Association *le ménage à trois*.⁴ My first intense involvement dates from the early 1980s, when I and my colleagues at the University of Victoria built the Vancouver Island Project, one of the first efforts to integrate and address the challenges and opportunities of archives, automation, and access. Our conceptual point of departure was a conviction that, in the emerging digital age, the classic distinction between libraries (where holdings are intellectually and administratively organized by subject) and archives (where holdings are intellectually and administratively organized by provenance) had become outdated since computerization enabled both priorities to be virtually implemented at the same time. Our view was that it was no longer sufficient that “inferentially based access dominates provenance-organized archives.” In response, we began exploring how modern technology could provide new approaches to access for all users.⁵

The most controversial aspect of this work involved our determination to provide researchers with systematic natural-language subject access that went far beyond the conventional approach to identifying archival records relevant to particular topics. Here, we found ourselves in the midst of heated debate among archivists about the meaning of provenance, intellectual control, and administrative control. It was at this point that we saw the very negative implications of the isolation (and considerable alienation) that characterized the relationships between the professional groups dealing with information, especially archivists, librarians, and researchers. Each of these groups was beginning to employ computers but in ways that characteristically precluded integration. Computers were being used as a tool to do better what each group was already doing, rather than to push the boundaries of established practice. Instead of facilitating access to information, computerization was usually raising to new heights the traditional walls separating, for example, those focused on manuscripts and those dealing with published documents. At the time, we were particularly concerned about the development of systems such

as SAPHIR⁶ at the Archives nationales du Québec. Elaborate, extensive, and expensive, SAPHIR (in its initial form) was designed by archivists for archivists, allowing them to gain better administrative control of their holdings throughout Quebec.⁷ This system only belatedly began to take account of the user perspective. In contrast, our central preoccupation was the researchers, not only as users but also as active partners in the construction of effective research tools.

Our objective for the Vancouver Island Project was to illustrate the potential of an integrated approach for increasing user access to the holdings of both libraries and archives. For this purpose, we developed the first SQL application for historical research, to allow a researcher to interrogate a comprehensive database containing descriptions of historical material related to Vancouver Island and held in various local repositories. To build this research tool, we designed a format to capture information about holdings that combined the field definitions associated with both libraries and archives. In doing this work, we drew upon the expertise of librarians and archivists as well as computer scientists and other specialists in the rapidly developing world of information science.⁸

To our surprise, archivists reacted to the announcement of our intentions with skepticism at best and sometimes hostility. Richard C. Berner depicted us as attackers laying siege to the archival castle.⁹ Gordon Dodds viewed us as usurpers attempting to issue edicts for implementation by supposedly unthinking archivists, an ambition that he found to “grate a little.”¹⁰ What expertise did historians have to develop an innovative approach to accessing archival records? Moreover, the idea that digital technologies were enabling the redefinition of established distinctions between the administrative and intellectual control of manuscript and published holdings was seen to run counter to the increasing professionalization of librarians and archivists. The assumption that users could successfully build research tools that fully respected not only the ambition of success but also the goals of repository leaders seemed unjustified, if not pretentious. Regrettably, in hindsight, we called the VIP tool an “automated archivist,” an expression that undoubtedly did not help smooth our engagement with the archival community.¹¹

6 SAPHIR (système, archives, publication, histoire, inventaire, recherche) was introduced in 1979.

7 Chad Gaffield, “Machines and Minds: Historians and the Emerging Collaboration,” *Social History/Histoire sociale* 21, no. 42 (November 1988): 312–17.

8 Peter A. Baskerville and Chad Gaffield, “The Vancouver Island Project: Historical Research and Archival Practice,” *Archivaria* 17 (1983–1984): 173–87.

9 Richard C. Berner, “Letters to the Editor,” *Archivaria* 18 (Summer 1984): 7–8.

10 Gordon Dodds, “Letters to the Editor,” *Archivaria* 18 (Summer 1984): 6.

11 Chad Gaffield and Peter A. Baskerville, “The Automated Archivist: Interdisciplinarity and the Process of Historical Research,” *Social Science History* 9 (Spring 1985): 167–84.

4 Jean-Claude Robert, “Discours du président : Historiens, archives et archivistes : un ménage à trois,” *Journal of the Canadian Historical Association/Revue de la Société historique du Canada* 1, no. 1 (1990): 3–15.

5 Peter Baskerville and Chad Gaffield, “Provenance and the Vancouver Island Project,” *Archivaria* 19 (Winter 1984–85): 7.

Fortunately, a small group of influential archivists welcomed our efforts, most notably Terry Cook and Ian E. Wilson, who themselves were pushing for new ways to re-imagine archives in a rapidly changing context. Thanks to their encouragement and constructive suggestions, we succeeded not only in building the VIP research tool, but also in stimulating discussion and debate about how a user perspective and collaboration across previously isolated professions enriched archival and library theory and method, as well as the quality of research in the digital age. The VIP initiative helped move the discussion beyond the goal of faster and more efficient versions of established approaches to the question of how digital technologies could underpin transformative initiatives with benefits for all involved.

The highlight of such engagement was a major conference in 1985: Archives, Automation and Access: An Interdisciplinary Conference for Archivists, Librarians, Records Managers, Information Scientists, and Researchers in the Humanities and Social Sciences, which was held at the University of Victoria 1-2 March 1985, attracted about 140 registrants.¹² In his thoughtful review of the conference, Terry Cook judged that our initiative was "throwing down the gauntlet to archivists" by showing that "the needs of producers and users are here today and the technology will be easily available tomorrow." Cook then asked readers, "Will archivists be ready to use it intelligently and consistently to fulfil their role in the shifting information paradigms?"¹³

Three decades later, this question is more important than ever. Since the early 1980s, I have viewed optimistically the potential for both libraries and archives to play a significantly enlarged, centrally positioned, and consequential role in the paradigm-shifting era that is transforming the private, public, and non-profit sectors in Canada and around the world. The issues at the heart of the current debate about archives reflect similar contested terrain in music, print media, television, and film. If consumers can also now be producers, and users can also be providers, then new relationships – and business models – must be developed to realize the positive potential of such engagement and collaboration.

History suggests that Canada could help lead the world, and there is no doubt that, at times, such leadership has clearly been evident. The creation of the Machine Readable Archives division at the Public Archives of Canada is one example of pioneering success in the 1970s. The work of this division helped stimulate concerted efforts to define a way forward based on the latest research findings from around the world as well as from an emerging

made-in-Canada research community. Such research and capacity-building were first enabled by the Canada Council for the Arts and then pursued by the Social Sciences and Humanities Research Council of Canada (SSHRC), which became deeply involved in the archives dossier immediately after it began operations.

SSHRC assumed responsibility for the Consultative Group on Canadian Archives in April 1978 and then published its report, *Canadian Archives*, in 1980. The SSHRC president, André Fortier, described it as "a timely overview, including the first extensive statistical analysis, of one of the most diverse and overlooked institutional fields in the country." The chair of the group and the lead author of the report, Ian E. Wilson, described "a sense of crisis among the Canadian archives," and the report concluded that the "alarm is real and well-founded," especially since "changing demands threaten to overwhelm them." Although the report did not emphasize the developing digital revolution, it did point to the increasing role of new electronic media that were broadening "the scope of archival documentation beyond what might even have been dreamt of a few decades ago."¹⁴

Systematic evidence of the rapidly changing archival context explained the report's conclusion that "the future development of the Canadian archival system depends on improved opportunities for training, education and research in archival science." One of the report's main recommendations was to add archival science to the list of eligible research fields explicitly supported by SSHRC. This recommendation was quickly acted upon, and throughout the 1980s applications for funding to advance knowledge in the field of archival science were welcomed in all grant competitions. Moreover, SSHRC created a new program in 1981, entitled Canadian Studies Research Tools, in order to improve access by scholars to research materials in archives, libraries, and other repositories. Designed by a task force composed largely of archivists, librarians, and bibliographers, the program was initially restricted to campus-based applicants and independent researchers; in 1988, eligibility was extended to archives across Canada. This SSHRC program supported a total of 399 projects by 1990, including the Vancouver Island Project, which received two grants in the early 1980s.

Significantly, though, the explicit welcoming of grant applications in archival science did not help cultivate a robust archival research community in Canada. SSHRC did fund a task force of the Bureau of Canadian Archivists to undertake original research on descriptive standards for archival material, but overall there were only modest research efforts to deal with the "crisis"

12 Baskerville and Gaffield, eds., *Archives, Automation, and Access*.

13 Terry Cook, "Archives, Automation, and Access: The Vancouver Island Project Revisited," *Archivaria* 20 (Summer 1985): 231-37.

14 Consultative Group on Canadian Archives, *Canadian Archives: Report to the Social Sciences and Humanities Research Council of Canada* (Ottawa: Information Division of the Social Sciences and Humanities Research Council of Canada, 1980), 105.

identified in the 1980 *Canadian Archives* report. In 1984, Queen's University archivist Anne MacDermaid praised the "far-sighted support by the SSHRC for the scholarly publication and research efforts of Canadian archives and archivists," but she also admitted that "few archivists have the time to even formulate worthy research projects."

Similarly, the vast majority of the projects funded under the Canadian Studies Research Tools program remained wedded to the analog paradigm. From the outset, the program emphasized that SSHRC "encourages the use of machine-readable formats, and is therefore prepared to support the use of consultants and the purchase of suitable equipment for the preparation and dissemination of machine-readable records." Moreover, SSHRC insisted that the results of grants should be accessible to the public and that special efforts should be made "to ensure the widest possible dissemination of such data."¹⁵ Nonetheless, for 90 percent of the projects funded during the 1980s, the output was a book.¹⁶ More generally, SSHRC's Advisory Committee on Archives observed in 1984 that "electronic media and the widespread use of computers in offices and homes are having substantial effects on the archival record, yet they remain unmet challenges for most archives."¹⁷

Not surprisingly, researchers continued to complain about the difficulties of getting access to research materials. Historian Philip Goldring observed in 1987 that there was a "decreasing correlation between the way collections are created, preserved, and organized, and the way researchers want to use them."¹⁸ In its formal evaluation of the Canadian Studies Research Tools program in 1990, SSHRC admitted that, during the decade and despite the program, there was "no real improvement in the state of documentation of archival holdings."¹⁹ The grant program closed shortly thereafter, following a chorus of complaints that the funding was not advancing knowledge but rather supporting existing archival operations.

While scholarship in archival science remained modest in Canada during the 1990s, there were two significant steps forward, involving a new academic program and a major research initiative. Under archivist Tom Nesmith's leadership, the University of Manitoba developed a master's program in archival studies, with inaugural graduates in 1991 and a total of sixty-six graduates

15 Social Sciences and Humanities Research Council of Canada (SSHRC), Strategic Grants Division, "Strategic Grants Program Guidelines - Canadian Studies Research Tools" (Ottawa: SSHRC, 1982), 1.

16 SSHRC, "Evaluation of the Canadian Studies Research Tools Program" (Ottawa: SSHRC, 1990).

17 SSHRC, "Report of the Advisory Committee on Archives" (Ottawa: SSHRC, 1984), 15.

18 Philip Goldring, "Some Modest Proposals: A Public Historian Looks at Archives," *Archivaria* 24 (Summer 1987): 125.

19 SSHRC, "Evaluation of the Canadian Studies Research Tools Program."

over the following decade. Soon thereafter, Professor Luciana Duranti of the University of British Columbia began studying the preservation of the integrity of electronic records, a topic that became central to the operations of businesses and institutions around the world. Now in its fourth phase, Duranti's InterPARES is a multi-million-dollar research initiative supported by SSHRC and forty-seven partners on six continents.

One other encouraging development during the 1990s was Canada's innovative initiative to integrate administratively the National Library and the National Archives. Under the leadership of Roch Carrier and Ian E. Wilson, this merger offered the possibility of scaling up to the pan-Canadian level the ambition of an intelligent cyber-infrastructure that could seamlessly respond to search queries with information from both institutions. As the first Librarian and Archivist of Canada, Wilson embraced the digitization of holdings and enhanced access through innovative research tools. He recognized the rapidly expanding public appetite for historical documents as well as the potential for advancing work through partnerships and collaboration. Under his leadership, for example, the now-merged Library and Archives Canada (LAC) became an active member of the Canadian Century Research Infrastructure project that created public use sample data from the 1911-1951 manuscript census returns as well as from diverse historical documents that provided the context for interpreting the social, economic, and cultural changes of the period. This cyber-infrastructure illustrated the potential of private-public partnerships to enable unprecedented, large-scale initiatives based on archival expertise as well as the expertise of companies such as IBM and Ancestry.com.

Research leadership such as that represented by Luciana Duranti and institutional leadership such as that provided by Ian E. Wilson suggest the potential of Canada to lead in the digital age. Moreover, the compelling rationale for embracing an integrated view of libraries and archives as components of an integrated digital knowledge infrastructure has now gained international currency and has been extended to museums, thanks to the efforts of those like G. Wayne Clough, the Smithsonian's twelfth secretary. His book, *Best of Both Worlds: Museums, Libraries, and Archives in a Digital Age*, emphasizes the power of digital technologies to enhance access to the holdings of multiple institutions simultaneously and thereby enable unprecedented educational and research initiatives. Similarly, Michael J. Paulus, Jr. has recently built upon the Vancouver Island Project's portrayal of a seamless continuum across all types of evidence about the past and present by proposing a life cycle of information in which both librarians and archivists "assume new roles and reposition themselves" for the digital age.²⁰

20 Michael J. Paulus, Jr., "Reconceptualizing Academic Libraries and Archives in the Digital Age," *Portal: Libraries and the Academy* 11, no. 4 (2011): 939-52.

Beyond such reconceptualizations is, of course, the hard work of developing standards to permit interoperability and effective integration across diverse types of holdings. The hope is that this work will not only be undertaken within separate professional gatherings but will also occur across the conventional twentieth-century boundaries that produced the distinct approaches to administrative and intellectual control – that is, not only libraries and archives but also museums.²¹ In this context, it is worth remembering MacDermid's perceptive description, written in 1984, of the "sister professions" of archival science, museology, and library science: "All three professions share a common concern for the preservation of our national heritage. All have an orientation toward aiding research and toward encouraging public use of their resources. All three professions share a common concern for the appropriate physical environment to protect their holdings." Indeed, the only noteworthy distinction for MacDermid was that "some of the archival needs differ slightly from those of the sister professions."²² In the same spirit, the University of Toronto expanded its library school to add archival studies during the 1990s and, later, museum studies. Likewise, the Université de Montréal now brings library and archival studies together, as does the University of British Columbia. In this sense, the major academic programs in Canada are ahead of both the professional associations and institutional structures.

The bad news currently is that the potential of Canadian leadership to begin making an archival golden age has been realized only very partially. That is why there is today a profound sense of crisis, as there was in 1980, about the need to refocus, reconceptualize, and reignite substantive discussion about where archives should go, why they should go there, what the next steps are, and how these steps should be taken. It is this need that is evident in the two major studies about the future of archives by the Council of Canadian Academies and the Royal Society of Canada.

Too often overlooked in the current debate are the fundamental ways that deep conceptual changes are being enabled, accelerated, and then influenced by digital technologies. In other words, the fundamental issues at stake are not financial or technological; rather, the fundamental issues involve profoundly new ways of thinking. And it is these new ways of thinking that are making the financial and technological issues so important.

One continuing challenge is the need to articulate clearly and compellingly how and why the dominant nineteenth- and twentieth-century paradigm is

indeed shifting and what this means for archives, especially in relationship to libraries and other institutions. One major factor is the emerging trend of personalization, which is dramatically increasing the role of archives in domestic life. Archives possess an important and sought-after commodity around the world: name-rich historical records. More and more individuals are actively reconstructing their own family and kinship groups through the automated record linkage of names in archival documents; such virtual genealogical communities are now being formed and complemented by real-world gatherings based on connections made.²³

The global leader in this new and rapidly expanding space is the multinational Ancestry.com, which is now a billion-dollar company with millions of subscribers. Based on the unparalleled documentary work of the Church of Jesus Christ of Latter-Day Saints (LDS), Ancestry.com uses advanced digital technologies to provide global access to archival sources that include personal names ranging from manuscript census enumeration forms to military records. The pioneering work in the rapidly growing genealogical industry was undertaken by the LDS, whose members began travelling the world to microfilm archival records, especially those related to births, marriages, and deaths. As Donald Harman Akenson has shown in his study of the LDS's "immodest, hubristic, monumental and heroic" genealogical project, the expanding genealogical industry successfully taps into the ability of archival records, such as parish registers and land titles, to offer people in most Western countries the opportunity to locate themselves within the global family tree.²⁴ This opportunity also led to the television show *Who Do You Think You Are?*, featuring celebrities learning about their own families from previously little-known archival documents, such as passenger ship registers and military registration forms.²⁵ LAC initiated and sponsored a Canadian version on the CBC, which developed thirteen half-hour programs. All the advertisements for each program promoted use of the LAC website, where users could take advantage of background research as well as links to the various indexes.

23 In addition to private companies, public archives are increasingly focused on supporting digitally enabled genealogical research, as illustrated by LAC's Genealogy and Family History services, <http://www.collectionscanada.gc.ca/022/index-e.html>.

24 Donald Harman Akenson, *Some Family: The Mormons and How Humanity Keeps Track of Itself* (Montreal and Kingston, ON: McGill-Queen's University Press, 2010).

25 The television show *Who Do You Think You Are?* first appeared on the BBC (see <http://www.bbc.co.uk/programmes/b0071575>) in 2004 and subsequently has been adapted in other countries such as Canada, where LAC convinced the Canadian Broadcasting Corporation (CBC) to develop a version in 2007 but, despite the inaugural success of the program, the CBC declined LAC's offer to fund a second season. See also A.J. Jacobs, "Are You My Cousin?" *New York Times: Sunday Review*, 2 February 2014; 1, 6; and Ian E. Wilson, "The Challenges of the Next Decade," *Canadian Issues/Thèmes canadiens: Towards a New Blueprint for Canada's Recorded Memory*, special edition (Spring 2014): 23–29.

21 See, for example, Lina Bountouri, *Archives in the Digital Age: Standards, Policies and Tools* (Cambridge, UK: Chandos, forthcoming). See also IC-ININFO 2013: 1st Workshop on Archives in the Digital Age: Standards, Policies and Tools, Prague, 5–9 September 2013.

22 Anne MacDermid, "Federal Support for Archives, Libraries and Museums," in *Report of the Advisory Committee on Archives*, ed. Ian E. Wilson (Ottawa: SSHRC, 1984), 57.

When the program was first aired, an unprecedented rush of visits crashed the LAC website; the site attracted over 100,000 active visits on the evening when celebrity hockey commentator Don Cherry broke into tears during the episode that featured his genealogical journey. One important result has been the unprecedented extent to which the archival record has become part of the lives of so many people around the world. The LDS Family History Library contains over two billion names gleaned from this archival record.

Recent research has also shown how genealogical interests can feed into nation-building ambitions, especially in the face of globalization. While public policy efforts to connect individual and family identities to specific geo-political spaces through commemorations and expositions have long traditions, their importance continues to increase in the global village of the early twenty-first century. In Canada, this development has been documented by Jocelyn Létourneau and his colleagues in the major research project Canadians and Their Pasts, which systematically surveyed residents across the country about the role that history plays in their lives. One key finding revealed “an intense interest in the personal past within a family context.” In turn, individuals seek to connect their family context to larger geopolitical settings. In this way, genealogical research becomes a door to more general historical consciousness. The researchers reported that their “survey suggests that family history often serves as a foundation for a broader historical consciousness and is a fundamental building block of people’s citizenship in their communities, in their country, and in the world.”²⁶

This pattern helps explain the increasing interest in placing name-rich archival records in a larger societal context that depends on integrated access to the holdings of museums, art galleries, and libraries. Understandably, this increasing interest calls for new ways to both respect and transcend the long-established reasons for separating contemporary and connected objects by placing them in various heritage and cultural institutions with distinct mandates. The new perspective depends on the construction of a comprehensive physical and virtual knowledge infrastructure. To achieve it, professionals currently in separate fields and institutions will have to see their work as making specific contributions within an overall coherently planned collective effort.

The new customer-driven marketplace has also moved the role of archives to the centre of business strategy. Successful companies now closely follow their customers and prospects as long as possible, and therefore retain longi-

tudinal records of transactions and communications as the foundation of business intelligence. Similarly, governments depend increasingly on archival records in light of relentless demands for documented accountability as well as legal and ethical behaviour. Robust records management is now a basic requirement in the public sector. While debates continue about appropriate retention and preservation policies, the general trend is toward developing an enhanced ability to document operations as well as decisions and financial reporting.

The result of such developments is an unprecedented increase in public awareness of, and interest in, archival documents. Along the way, individuals and families, companies and institutions have developed an increased confidence in their ability to describe and explain people in the past and present based on personal histories or consumer habits or indeed any other aspect of human thought and behaviour. In fact, archives are now recognized to hold the big data of both the analog and digital world.²⁷

It is also noteworthy that the increasing public awareness of archival records is based on a profound rethinking of who is an expert. Just as students take an active responsibility for their learning and patients for their health, archival users are now also contributors in the expanding world of crowdsourcing, citizen science, and similar collective efforts involving a mix of official and unofficial “experts.” While heritage institutions often now invite the public to participate in transcribing documents or proofreading, the public can add expertise. Encouraging examples now include initiatives to crowdsource the work of annotating documents or identifying individuals in older photos. This approach takes the logic of historian-developed archival research tools to a much greater level that should not be seen as threatening to professionals but rather as opening possibilities that would otherwise be unachievable. The website of the National Archives and Records Administration in the United States now has a section for citizen archivists, to attract contributions to archival projects ranging from transcribing to uploading and sharing documents. LAC revealed similar potential in Canada, including successful collaboration with the public during Project Naming, an initiative to identify people in 1940s and 1950s photographs taken in Nunavut. Such examples illustrate the profound re-imagining of the relationship between archives and the larger society now underway internationally.

The recent dramatic increase in public awareness of archival records is also connected to new approaches in formal education. The exponentially greater capacity of digital technologies to connect users with specific documents

26 Margaret Conrad, Kadriye Ercikan, Gerald Friesen, Jocelyn Létourneau, Delphin Muise, David Northrup, and Peter Seixas, *Canadians and Their Pasts* (Toronto: University of Toronto Press, 2013), 82–83. See also Wilson, “The Challenges of the Next Decade.” Wilson emphasizes that the 1911 Canadian census returns attracted an average of seventeen downloads per second during the first year of posting by LAC.

27 For reflections on the increasing importance of born-digital records, see, for example, Lawrence Serewicz, “Is Augmented Reality the Future for Archives in a Digital Age?” *Thoughts on Management*, accessed 27 February 2014, <http://thoughtmanagement.org/2012/11/11/is-augmented-reality-the-future-for-archives-in-a-digital-age/>.

enables the type of “active” experiential learning that is replacing passive transmission-of-knowledge broadcast teaching.²⁸ The new student-centred education relies on access to archival documents, not only in history classes, but also in many other fields, such as health sciences. Undergraduate research has become a top priority across universities, and students are increasingly seeking to analyze archival records as part of collective and personalized research projects. Such initiatives all depend on the success of the user experience. In this sense, the future of archives is only partly in the hands of archivists; the winning strategy involves collaboration and engagement with librarians and other professionals, with private sector partners, and especially with users. Digital access changes the profile of users while also making their engagement more important than ever. In this changing context, archives are no longer seeking to automate the analog approach; rather, as in the case of schools, the music industry, and other sectors, technology is enabling very different thinking and supporting different relationships between people and the archival record.

To thrive in this rapidly changing context, archives must move from primarily inward-looking institutions to outward-looking partners engaged with individuals and organizations across the private, public, and non-profit sectors. This new approach requires new business models that reflect an updated definition of the real added value of archival expertise and responsibility.

While archivists have always engaged with users, their predominant focus has been on the archival record. Clearly, though, archivists are ideally positioned to contribute as recognized research collaborators with users – as co-producers of knowledge – given their work in preservation, conservation, and access provision. Moreover, unlike most analog “broadcast” institutions such as museums, archives have always been built for user engagement. In keeping with the spirit of digital age thinking, archives invite – indeed require – users to be active, constantly making decisions about what records to access, how to examine them, and how to interpret their significance.

In this context, the real added value of archivists goes beyond their custodial role to include suggestions, ideas, insights, and approaches to archival records in order to increase their value for users. This work is similar to the ambition of Ancestry.com, not only to make archival records accessible, but also to provide tools so that family trees can be built; biographies can be constructed from multiple sources, and links can be made to other researchers interested in the same records. This ambition is certainly linked to the conventional “services” approach but goes beyond, to partnership and collaboration

within deepening relationships as users pursue research interests. Clearly, public archives must develop business models to support various types and levels of partnership and collaboration in adding value to archival records. In this sense, archives can be both a public and private good; indeed, the old dichotomy no longer holds, if it ever did.

The shifted paradigm of archives calls for a renewed “partnership of effort” across all sectors and involving collaboration with professionals ranging from librarians to auditors, with privacy and information commissioners, and with users through ongoing engagement. Such collaboration must also extend to enterprise content managers, especially given the importance of embedded decisions in advanced search algorithms and computational analytics; indeed, familiarity with coding should become a required competency across the archival landscape, as it should for all researchers.²⁹ Similarly, the new required digital literacies include familiarity with the latest enterprise content management systems as well as strategies in semantic search, especially as applied to unstructured data.

The need is urgent. The opportunity is before us. Can we harness the unprecedented and increasing public and private interest in the archival record to create a robust and sustainable knowledge infrastructure for the twenty-first century and beyond? History suggests that we can by building on previous examples of Canadian leadership in archival innovation for the digital age.

29 Many professions are now recognizing the value of computer programming competency; see, for example, Liz Hannaford, “Recalculating the Newsroom: The Rise of the Journo-Coder?” *Journalism.co.uk*, 21 January 2014, <http://www.journalism.co.uk/news/recalculating-the-newsroom-the-rise-of-the-journo-coder-is2/a555646/>. Hannaford discusses how journalists with such competency are taking “journalism to a whole new level – interrogating data to find the stories nobody else could or turning static, text-based web pages into dynamic, interactive tools.”

28 One fine example is reported in John Bonnett, “Following in Rabelais’ Footsteps: Immersive History and the 3D Virtual Buildings Project,” *History and Computing* 6, no. 2 (September 2003), accessed 27 February 2014, <http://brocku.academia.edu/JohnBonnett>.