

Improving Digital Collection Access with Simple Search Engine Optimization Strategies

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Challenges to supporting academic library research

Supporting research access to scholarly information is an increasing challenge in academic libraries, requiring the improvement and adaptation of established practices along with the application of new approaches. In the African context a lack of adequate infrastructure, technical communications, and social support poses additional challenges^{1,2,3} (including those for western scholars seeking African initiated and produced research).⁴ However, these issues are broadly shared: the corpus of data appropriate for scholarly attention has been redefined and expanded;^{5,6} growth in the volume of published research continues at unprecedented rates;^{7,8,9} and the avenues for accessing information resources

¹ W. Wresch. *Disconnected: Haves and Have-nots in the Information Age* (New Brunswick, NJ, Rutgers University Press, 1996).

² For an optimistic view, see: C. Angello, 'The Awareness and Use of Electronic Information Sources Among Livestock Researchers in Tanzania', *Journal of Information Literacy*, 4, 2 (2010), pp. 6-22, available at <http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V4-I2-2010-1>.

³ A. Kiyindou, 'Accessibilité de l'information en Afrique', *Africa Media Review*, 16, 1 (2008), pp. 73-90, available at http://www.codesria.org/IMG/pdf/AMR_16_1_2008_4_Kiyindou.pdf.

⁴ G. Walsh, "'Can we get there from here?' Negotiating the Washouts, Cave-ins, Dead ends and Other Hazards on the Road to Research on Africa', *The Reference Librarian*, 42, 87, (2004), pp. 5-96, available at http://dx.doi.org/10.1300/J120v42n87_02.

⁵ C. Borgman, *Scholarship in the Digital Age: Information, Infrastructure, and the Internet* (Cambridge, MA, MIT University Press, 2007), p. 214.

⁶ S. Wilberley, Jr. and W. Jones, 'Patterns of Information Seeking in the Humanities', *College & Research Libraries*, 50, 6 (1989), pp. 638-645.

⁷ K. Schmidt and N. Newsome, 'The Changing Landscape of Serials', *The Serials Librarian*, 52, 1-2, (2007), pp. 119-133, available at http://dx.doi.org/10.1300/J123v52n01_11.

⁸ J. Navin and J. Vandever, 'The Market for Scholarly Communication', *Journal of Library Administration*, 51, 5/6 (2011), pp. 455-463.

⁹ M. Ware and M. Mabe. *The STM Report: An Overview of Scientific and Scholarly Journal Publishing* (Oxford, International Association of Scientific, Technical, and Medical Publishers/Prima House, 2009).

have diversified greatly into 'data silos'.^{10,11,12} Together, these and related factors make today's scholarly information landscape larger and more complex to navigate than it was even just a few years ago.^{13,14}

For centuries the challenges of research access centred on identifying, locating, and delivering physical materials to scholars (and scholars to collections). While these issues remain relevant, the centre has shifted. Along with this shift the focus now is on providing scholars with effective bibliographic tools, assisting them to choose the most appropriate tools for the question at hand and effectively apply search techniques that generate the best results. In doing so, we allow scholars to assess and evaluate only the most relevant sources in order to determine their value for further attention. Filtering many results within one's time constraints is a more common current problem than identifying a sufficient number of sources. Faced with an increasingly complex and challenging information environment, it is no wonder that many library users prefer fewer, simple, unified search tools¹⁵ that resemble familiar resources like *Wikipedia*¹⁶ and Google which, for better or worse in the context of scholarly research, they are familiar with and trust.^{17,18} In this chapter, the authors propose that librarians, archivists, and collection managers¹⁹ who are responsible for providing access to research collections consider an additional approach: Search Engine Optimization (SEO).²⁰ SEO does not rely on knowing or contacting potential users, but it nevertheless improves the effectiveness of their general online searches by elevating, when relevant, library and archival collection materials to a more prominent place in search engine results.

Research users 'information-seeking behavior'²¹ is changing in ways that make it difficult for librarians to fully support access to scholarly information with established practices alone: library research is increasingly undertaken initially or even exclusively online,^{22,23,24} removed from library social spaces,^{25,26}

¹⁰ M. Somerville, 'SAGE'S White Paper on Discoverability in the Twenty-First Century: Collaboration Opportunities for Publishers, Vendors, and Librarians', *Against the Grain*, 24, 3 (2012), pp.18-22, available at <http://www.against-the-grain.com/2012/07/v24-3-sages-white-paper-on-discoverability-in-the-twenty-first-century-collaboration-opportunities-for-publishers-vendors-and-librarians/>.

¹¹ A. Hey and A. Trefethen, 'The Data Deluge: an e-Science Perspective', in F. Berman, G. Fox and A.J.G. Hey (eds), *Grid Computing: Making the Global Infrastructure a Reality* (Chichester, Wiley, 2003), pp. 809-824.

¹² D. Fulkerson, *Remote Access Technologies for Library Collections* (Hershey, PA, Information Science Reference (IGI Global), 2012). Available at <http://my.safaribooksonline.com/book/-/9781466602342>.

¹³ P. Lyman and H. R. Varian, 'How Much Information' (2003), available at <http://www.sims.berkeley.edu/how-much-info-2003>.

¹⁴ C. Lynch, 'The Institutional Challenges of Cyberinfrastructure and e-Research', *EDUCAUSE Review* 43, 6 (2008), pp. 74-88. Available at <http://www.educause.edu/ero/article/institutional-challenges-cyberinfrastructure-and-e-research>.

¹⁵ See Borgman, *Scholarship in the Digital Age*, p. 255.

¹⁶ See A. Head and M. Eisenberg, 'Finding Context: What Today's College Students say about Conducting Research in the Digital Age', in *Project Information Literacy Progress Report* (Seattle, WA, University of Washington Information School, 2009), pp. 11-13, available at <http://projectinfolit.org/publications/>.

¹⁷ E. Hargittai, L. Fullerton, E. Menchen-Trevino and K. Yates Thomas, 'Trust Online: Young Adults' Evaluation of Web Content', *International Journal of Communication*, 4, (2010), pp. 468-494.

¹⁸ K. Purcell, J. Brenner and L. Rainie. *Search Engine Use 2012* (Washington, DC, Pew Research Center's Internet & American Life Project, March 3, 2012), available at <http://pewinternet.org/Reports/2012/Search-Engine-Use-2012.aspx>.

¹⁹ Hereafter, with the term librarian or curator, we intend to include archivists and other professional collection managers, within or outside a library institutional context.

²⁰ N. Carroll, [Entry on Search Engine Optimization], *Encyclopedia of Library and Information Sciences*, 3rd ed. (Boca Raton FL, Taylor & Francis, 2011). Available at <http://www.tandfonline.com>.

²¹ D. Case, *Looking for Information: a Survey of Research on Information Seeking, Needs and Behavior*, 3rd ed., (New York, Emerald Press, 2012).

²² L. Duke and A. Asher (eds), *College Libraries and Student Culture: What We Now Know* (Chicago, IL, American Library Association, 2012).

resulting in fewer opportunities²⁷ for librarians to constructively intervene and offer mediated search services²⁸ (serendipitously assisting and training users at their moment of greatest need and receptivity).²⁹ In the networked, online scholarly research environment researchers may not recognize that they are employing library-mediated resources, which have been selected, subscribed to, and managed based on local needs (a transparent service³⁰ that may represent a political failure with negative budgetary implications). Many may, in fact, employ external discovery tools preferentially over the catalogue and other library sponsored systems.³¹ Even when employing library systems, researchers may fail to authenticate their online activities with an institutional password, preventing direct, legitimate access to subscription and proprietary 'Deep Web' resources unavailable to general browsers³² (perhaps relying instead on peer based resource sharing).³³ Many users also consider librarians to be 'book experts' or guides to library physical spaces,³⁴ dissuading requests³⁵ for mediated research assistance from librarians.³⁶ A variety of disciplinary, demographic, racial and economic differences among library users (and non-users) may further limit the reach and benefit of library resources developed with the intent of benefiting all.³⁷ How do we reach the broad population of academic library users and expand our services to potential users? We are interested here primarily in facilitating effective scholarly research and improving intellectual access to scholarly materials as a public service, rather than marketing library services.

²³ N. Foster and S. Gibbons (eds), *Studying Students: the Undergraduate Research Project at the University of Rochester* (Chicago, IL, Association of College and Research Libraries, 2007). Available at <http://hdl.handle.net/1802/7520>.

²⁴ Purcell, et al., *Search Engine Use 2012*.

²⁵ R. Vondracek, 'Comfort and Convenience? Why Students Choose Alternatives to the Library', *Portal*, 7, 3, (2007), pp. 277–293. Available at http://muse.jhu.edu/journals/portal_libraries_and_the_academy/v007/7.3vondracek.html

²⁶ S. Bennett, *Library as Place: Rethinking Roles, Rethinking Space*. CLIR Pub. 129. (Washington, DC, Council on Library and Information Resources, 2005). Available at <http://www.clir.org/pubs/reports/pub129/contents.html>.

²⁷ S. Miller and N. Murillo. 'Why don't Students ask Librarians for Help?: Undergraduate Help-seeking Behavior in Three Academic Libraries' in Duke and Asher, *College Libraries and Student Culture*, pp. 49-70.

²⁸ B. Nardi and V. O'Day, *Information Ecologies: using Technology with Heart* (Cambridge, MA, MIT Press, 1999).

²⁹ M. Block, 'Teach Them While They're Asking for Information.' *ExLibris* (5 July 2002).

³⁰ See: Google, 'Northwestern University Library increases Access to its Electronic Holdings using Google Scholar Library Links', *Google Scholar's Library Links Program Case Study*, 2007. Available at http://scholar.google.com/intl/en/scholar/story/Google_Scholar_Northwestern_Library.pdf.

³¹ S. Harris, *Moving Towards an Open Access Future: the Role of Academic Libraries* (SAGE Publications and British Library, 2012). Available at <http://www.uk.sagepub.com/repository/binaries/pdf/Library-OARReport.pdf>

³² B. He, M. Patel, Z. Zhang and K. Chang, 'Accessing the Deep Web: a Survey', *Communications of the ACM (CACM)* 50, 2 (2007), pp. 94–101, available at [doi:10.1145/1230819.1241670](https://doi.org/10.1145/1230819.1241670).

³³ V. O'Day and R. Jeffries, 'Information Artisans: Patterns of Result Sharing by Information Searchers', COCS '93 Proceedings of the conference on Organizational computing systems (New York, ACM, 1993), pp. 98-107. Available at [10.1145/168555.168566](https://doi.org/10.1145/168555.168566).

³⁴ B. Fister, 'Fear of Reference', *Chronicle of Higher Education* (14 June 2002), p. B20, available at <http://chronicle.com/article/Fear-of-Reference/2928>.

³⁵ Miller and Murillo, 'Why don't Students ask Librarians for Help?' in Duke and Asher, *College libraries and student culture*, p. 53.

³⁶ L. Suchman, *Human-machine Reconfigurations: Plans and Situated Actions*, 2nd ed. (New York, Cambridge University Press, 2007).

³⁷ See E. Whitmire, 'Cultural Diversity and Undergraduates' Academic Library Use', *Journal of Academic Librarianship*, 29, 3 (2003) pp.148-161.

Two established approaches to support collection access

Academic libraries rely on two established, general approaches for supporting scholarly access to library resources. The first consists of maintaining and improving bibliographic search and discovery tools. Examples include the library's catalogue,^{38,39} its Web sites and associated databases, as well as indexes and finding aids.⁴⁰ Together with the Online Public Access Catalogue (OPAC), are navigation platforms (*Blacklight*⁴¹ is an example), electronic journal management applications and 'federated search' or 'Web-scale discovery'^{42,43} products (e.g. *Summon*, *WorldCat Local*, *EBSCO Discovery Services*, and *Primo Central*). These tools support integrated access to print and digital collections, ideally providing a single access point to resources, independent of location. An important consideration, particularly in the African context, is that such highly integrated, well designed and easy to use (though difficult to set up) commercial products are too expensive for many libraries to implement on behalf of their users. Beyond the question of affordability is usage: are library patrons using the resources for which their institutions have paid so much in support of scholarly work?

Without consulting the library Web site or OPAC, patrons cannot access all of the resources available to authenticated users. This may lead researchers to purchase individual access through one resource aggregator (which shows access is not provided by the library license with *that site*), although access paid for by their institution may be available elsewhere, as indicated in the OPAC or library Web site. In today's Web-centred research environment, alternatives to library developed or sponsored search and discovery tools are available elsewhere online,⁴⁴ so the local library Web site (which itself may appear outdated, dauntingly complex, or poorly designed to many users)^{45,46,47} may have limited impact, despite the availability of high quality, specialized and appropriate tools it offers. Educating library users to authenticate their access to licensed resources and consult the library's online tools at the appropriate time is a challenge that highlights the socio-technical nature of many library research and access issues, as well as the benefits of expert human mediation in facilitating the highest quality library research.⁴⁸ A static approach to reaching users (addressing only those who visit the library, either physically or via its online services) results in lost opportunities to support and assist researchers (using other resources) to conduct their scholarly work more effectively.

³⁸ D. Tyckoson, 'The catalog as index to the collection', *Technicalities*, 17, 1 (1997), pp. 10-12.

³⁹ K. Antelman, E. Lynema, and A.K. Pace, 'Toward a twenty-first century library catalog', *Information Technology & Libraries*, 25, 3 (2006) pp.128-139.

⁴⁰ See Borgman, *Scholarship in the Digital Age*, p. 82.

⁴¹ 'Project Blacklight', *Project Blacklight*, available at <http://projectblacklight.org/>.

⁴² J. Vaughan, 'Web Scale Discovery Services', *Library Technology Reports*, 47, 1 (2011), pp. 1-61.

⁴³ S. Garrison, G. Boston, and S. Bair, 'Taming Lightning in More Than One Bottle: Implementing a Local Next-Generation Catalog Versus a Hosted Web-Scale Discovery Service', *ACRL Conference Proceedings*, (Philadelphia, 30 March-2 April 2011), available at https://www.ala.org/ala/mgrps/divs/acrl/events/national/2011/papers/taming_lightning.pdf.

⁴⁴ See G. Herrera, 'Google Scholar Users and User Behaviors: an Exploratory Study', *College & Research Libraries*, 72, 4 (2011), pp. 316-330, available at <http://crl.acrl.org/content/72/4/316.full.pdf+html>.

⁴⁵ Y.-M. Kim, 'The Adoption of University Library Website Resources: a Multi-Group Analysis', *Journal of the American Society for Information Science and Technology*, 61, 5 (2010), pp. 978-993.

⁴⁶ P. Harpel-Burke, 'Library Homepage Design at Medium-Sized Universities: a Comparison to Commercial Homepages via Nielsen and Tahir.' *Library Homepage Design*, 21, 3 (2010), pp. 193-208.

⁴⁷ A. Tombros, I. Ruthven, and J. Jose, 'How Users Assess Web Pages for Information Seeking', *Journal of the American Society for Information Science and Technology*, 56, 4 (2005), pp. 327-344.

⁴⁸ Nardi and O'Day, *Information Ecologies*.

The second approach that academic libraries undertake to support and improve access is instruction in information literacy^{49,50} for library users (and identified groups of potential users). While historically library instruction extends reference public service support activities to assist users with library services and resources,⁵¹ a more currently accepted view is that 'Academic librarians teach students information literacy skills to successfully complete assignments in preparation for a 21st century workplace...'⁵² Proven best practices to advance the quality of library research include offering formal⁵³ and informal^{54,55} information literacy training.⁵⁶ While effective for students who are engaged by such efforts,⁵⁷ this approach has limits in scope, depth and acceptance.⁵⁸ The range of library instruction practices across academic institutions is broad, reflecting a weak institutionalization of instruction programmes among academic libraries, educational institutions and, for North America, a lack of support by means of accreditation criteria.⁵⁹ While there are international examples of a comprehensive incorporation of information literacy programmes into the curriculum^{60,61} it may be that, under current budgetary circumstances, the best opportunity for most academic libraries to support broad information literacy instruction is with online courses,⁶² which do not necessarily suffer from the problem of scalability⁶³ and may require few recurring resources once implemented. In the present context, because instruction is

⁴⁹ CILIP, 'Information Literacy: Definition', Web site (London, Chartered Institute of Library and Information Professionals, 2011), available at <http://www.cilip.org.uk/get-involved/advocacy/information-literacy/Pages/definition.aspx>.

⁵⁰ C. Cox and E. Lindsay (eds), *Information Literacy Instruction Handbook* (Chicago, IL, Association of College and Research Libraries, 2008).

⁵¹ C. Seymour, 'Ethnographic Study of Information Literacy Librarians' Work Experience: a Report from Two States', in C. Wilkinson and C. Bruch (eds), *Transforming Information Literacy Programs: Intersecting Frontiers of Self, Library Culture, and Campus Community* (Chicago, IL, Association of College and Research Libraries, 2012), p. 67.

⁵² E. Welty, S. Hofstetter and S. Schulte, 'Time to Re-evaluate How We Teach Information Literacy: Applying PICO in Library Instruction', *College & Research Libraries News*, 73, 8 (2012), p. 476.

⁵³ C. Hollister (ed.) *Best Practices for Credit-bearing Information Literacy Courses* (Chicago, IL, Association of College and Research Libraries, 2010).

⁵⁴ M. O'Kelly and C. Lyon 'Google Like a Librarian: Sharing Skills for Search Success' *College & Research Libraries News*, 72, 6 (2011), pp. 330-332.

⁵⁵ B. Dewey, 'The Embedded Librarian', *Resource Sharing and Information Networks*, 17, 1 (2005), pp. 5-7.

⁵⁶ A. Daugherty and M. Russo, 'An Assessment of the Lasting Effects of a Stand-Alone Information Literacy Course: the Students' Perspective', *Journal of Academic Librarianship*, 37, 4 (2011), pp. 319-326.

⁵⁷ P. Maughan, 'Assessing Information Literacy among Undergraduates: a Discussion of the Literature and the University of California-Berkeley Assessment Experience', *College & Research Libraries*, 62, 1 (2001), pp. 71-85, available at <http://crl.acrl.org/content/62/1/71.full.pdf+html>.

⁵⁸ K. Fast and D. Campbell, 'I Still Like Google: University Student Perceptions of Searching OPACs and the Web', in *Proceedings of the 67th ASIS&T Annual Meeting* (Providence, RI, American Society for Information Science and Technology, 2004), p.144, available at: http://kentstate.academia.edu/karlfast/Papers/346309/I_Still_Like_Google_University_Student_Perceptions_of_Searching_OPACs_and_the_Web.

⁵⁹ C. Bruch and C. Wilkinson, 'Surveying Terrain, Clearing Pathways', in Wilkinson and Bruch, *Transforming Information Literacy Programs*, pp. 10-11.

⁶⁰ A. Coulon, *Penser, Classifier, Catégoriser: l'Efficacité de l'Enseignement de la Méthodologie dans les Premiers Cycles Universitaires. Le Cas de L'Université de Paris 8* (Saint-Denis, Association International de Recherche Ethnométhodologique, 1999).

⁶¹ J. Lau (ed), *Information Literacy: International Perspectives* (Munich, K.G. Saur, 2008).

⁶² Y. Mery, J. Newby and K. Peng, 'Why One-shot Information Literacy Sessions are Not the Future of Instruction: a Case for Online Credit Courses', *College & Research Libraries*, 73, 4 (2012), pp. 366-377, available at <http://crl.acrl.org/content/73/4/366.full.pdf+html>.

⁶³ C. Gibson, 'The History of Information Literacy', in Cox and Lindsay (eds), *Information Literacy Instruction Handbook*, p. 15.

most often comprised of either a general survey or a discipline specific approach, research relating to manuscripts and archives (including digital primary resource collections) is rarely emphasized.

The authors support improving access to library collections in these proven and established ways. However, in this chapter we introduce a less well known, but simple and powerful additional way to assist library users in discovering relevant collections while conducting research away from library buildings, on their own, and without prior knowledge of potentially useful collections. Librarians who develop tools for discoverability⁶⁴ and access (including creating metadata and finding aids for archival and manuscript collections) should consider employing simple SEO strategies to ensure that researchers without superior online search skills can find relevant resources in their collections.⁶⁵

Extending our reach with SEO practices

Although less widely known in academia and infrequently employed by collection curators,^{66,67} a third approach has great potential for expanding the scope and impact of library research support activities by providing a public service to unknown users, without specialized skills, using unauthenticated accounts, and who are unaware of the specific resources that meet the search criteria they have entered on a general Web search engine site. Employing SEO techniques can enhance resource discoverability to expand the scope of impact beyond library walls. Further, they can be initiated by individual collection curators at little cost. Creating or editing *Wikipedia* pages related to one's collection contents, for example, can complement traditional methods in promoting discoverability and access^{68,69} and may have an immediate, noticeable and demonstrable impact on online results pages and server log statistics.^{70,71}

In the remainder of this chapter, we describe the Web environment, outline how search engines work, and provide examples of techniques from our collaboration on the *J.M. Derscheid Collection* that curators can use or adapt as enhancements to established practices that will make their digital archives and other collections more readily discoverable online. Throughout, we emphasize that SEO work is socio-technical, relying on the interaction of people and technology. By understanding the research context and contents of our collections, communicating the relevant concepts related to their contents and by linking and strengthening the intellectual connections across scholarly communications channels, we work together to leverage technical tools in ways that enhance social connections and facilitate scholarly research.⁷²

⁶⁴ Discoverability is used for information seeking and usability. For usability, discoverability is 'the ability for users to locate something they need to complete a certain task' from S. Ginsberg, 'The Evolution of Discoverability,' *UX Magazine* (March 2, 2012: Article 629), available at <http://uxmag.com/articles/the-evolution-of-discoverability>.

⁶⁵ Carroll, [Search Engine Optimization], 2011.

⁶⁶ This is changing with initiatives to improve SEO through Wikipedia editing, as with <http://interactivearchivist.archivists.org/case-studies/wikipedia-at-uw/>; <http://blogs.princeton.edu/rbsc/2012/04/24/the-princeton-university-archives-is-hosting-a-wikipedia-edit-a-thon-on-the-theme-of-women-at-princeton/>; <http://siarchives.si.edu/blog/inside-wikipedia-edit-thon>; <http://ufdc.ufl.edu/AA00001431>; and <http://ufdc.ufl.edu/AA00011385>.

⁶⁷ See also 'Search Engine Optimization', *Writing your Article* (Abingdon, Taylor & Francis Author Services) available at <http://journalauthors.tandf.co.uk/preparation/writing.asp>.

⁶⁸ J. Beel, B. Gipp and E. Wilde, 'Academic Search Engine Optimization (ASEO): Optimizing Scholarly Literature for Google Scholar and Co.', *Journal of Scholarly Publishing*, 41, 2 (2010), pp. 176-190.

⁶⁹ E. Rushton, M. Kelehan and M. Strong, 'Searching for a New Way to Reach Patrons: a Search Engine Optimization Pilot Project at Binghamton University Libraries', *Journal of Web Librarianship*, 2, 4 (2008), pp. 525-547, available at <http://dx.doi.org/10.1080/19322900802484248>.

⁷⁰ K. Cahill and R. Chalut, 'Optimal Results: what Libraries Need to Know about Google and Search Engine Optimization', *The Reference Librarian*, 50, 3 (2009), pp. 234-247, available at <http://dx.doi.org/10.1080/02763870902961969>.

⁷¹ E. Rushton and S. Funke, 'The Goodness in the Evil of SEO', *Searcher*, 19, 9 (2011), pp. 30-35.

⁷² R. Kling, G. McKim and A. King, 'A Bit More to It: Scholarly Communication Forums as Socio-Technical Interaction Networks', *Journal of the American Society for Information Science and Technology* 54, 1

SEO work in the context of academic libraries and archives serves the aims of research, teaching, and service. Thus, such work constitutes public scholarship.⁷³ Our work is valuable in assisting researchers to discover library and archival materials that are worthy of consideration given their online searches. This chapter uses as an example the award-winning set of techniques that the authors employed to promote the *Derscheid Collection* in the University of Florida Digital Collections (UFDC).^{74,75} The techniques outlined here are effective whether or not researchers read our SEO contributions online or are even aware, prior to searching, that (for example) the *Derscheid Collection* is potentially relevant to their research.⁷⁶

How Web Search Engines Work

Web search engines succeed by providing ready, accurate access to the materials for which users are searching; however, many Web sites are not searched because they are not indexed. These are sometimes referred to as the Deep or Invisible Web.⁷⁷ Many other Web sites could be included in the Visible Web, but are not (or fail to be included at the ideal level of relevance) because they do not conform to search engine requirements. Google explains how Search works:

Today our algorithms rely on more than 200 unique signals, some of which you'd expect like how often the search terms occur on the webpage, if they appear in the title or whether synonyms of the search terms occur on the page. Google has invented many innovations in search to improve the answers you find. The first and most well known is PageRank, named for Larry Page (Google's co-founder and CEO). PageRank works by counting the number and quality of links to a page to determine a rough estimate of how important the website is. The underlying assumption is that more important websites are likely to receive more links from other websites.⁷⁸

While commercial search engine algorithms are proprietary and the many 'unique signals' and methods are updated continuously by the provider, Google, Bing, and other search engines provide documentation to assist Web site managers to optimize sites for inclusion.⁷⁹ We focus on Google because it is currently the dominant global search engine and Google.com is one of the most visited sites worldwide.⁸⁰ Google explains the basics of search as falling into three categories: crawling, indexing, and serving.⁸¹ Crawling

(2003), 57-67 available at <http://www.ics.uci.edu/~corps/phaseii/KlingMcKimKing-ScholarlyForumsSTIN-JASIST.pdf>. Also see: J. Bennett, *Vibrant Matter: a Political Ecology of Things*, (Durham, NC, Duke UP, 2010).

⁷³ In the US, public scholarship is undertaken in all fields with initiatives like 'Imagining America' connecting artists and public life (<http://imaginingamerica.org/>) and with the role of public, land-grant universities specifically founded on supporting the public interest as explained by the Association of Public and Land-Grant Universities, available at <http://www.aplu.org/page.aspx?pid=203>.

⁷⁴ Center for Research Libraries, 'CRL Primary Source Awards', *Focus on Global Resources*, 31, 3 (2012), pp. 3-4, available at <http://www.crl.edu/focus/article/8132>.

⁷⁵ D. Reboussin, *J. M. Derscheid Digital Collection* (Gainesville, FL, George A. Smathers Libraries, University of Florida Digital Collections, 2011), available at <http://ufdc.ufl.edu/derscheid>.

⁷⁶ Carroll, [Search Engine Optimization], 2011.

⁷⁷ C. Sherman and G. Price, 'The Invisible Web: Uncovering Sources Search Engines Can't See', *Library Trends*, 52, 2 (2003), pp. 282-298, available at https://www.ideals.illinois.edu/bitstream/handle/2142/8528/librarytrendsv52i2h_opt.pdf.

'Deep Web', Wikipedia, available at http://en.wikipedia.org/wiki/Deep_Web.

⁷⁸ 'How Google Search Works', available at <http://www.google.com/competition/howgooglesearchworks.html>.

⁷⁹ 'Google Webmaster Tools', available at <https://www.google.com/webmasters/tools/home?hl=en>; see also: Bing Webmaster Tools, available at <http://onlinehelp.microsoft.com/en-us/bing/gg132923.aspx>

⁸⁰ 'Top 500', *Alexa*, available at <http://www.alexa.com/topsites>.

⁸¹ 'Google Webmaster Tools', Google Basics, available at <http://support.google.com/webmasters/bin/answer.py?hl=en&answer=70897&topic=2370570&ctx=topic>.

refers to the process by which the Google's algorithms analyze Web pages based on prior 'crawls',⁸² Web links, and sitemaps. The Sitemap protocol defines how sitemaps are used as:

an easy way for webmasters to inform search engines about pages on their sites that are available for crawling. In its simplest form, a Sitemap is an XML file that lists URLs for a site along with additional metadata about each URL (when it was last updated, how often it usually changes, and how important it is, relative to other URLs in the site) so that search engines can more intelligently crawl the site.⁸³

In addition to exploiting protocols like these for sitemaps, Google publishes best practices to ensure Web sites are indexed properly and to prevent sites from being removed. Common best practice recommendations include design, content, technical, and quality guidelines.⁸⁴

In addition to the best practices recommended by search engine providers, other Web design best practices also support SEO, including designing for user accessibility; for instance, by creating alternative text for images, visually impaired users employing audio technology can hear image descriptions on the Web site.⁸⁵ SEO is thus part of a larger 'holistic discoverability strategy' that supports Web site discoverability, content discovery within Web sites, and navigation through the Web to find information.⁸⁶

While search engine guidelines may appear to relate to those areas of libraries controlled by technical professionals or dictated by systems outside content-creator control, many curators do control the quality of the information presented on library Web sites. More importantly:

Though relevance ranking algorithms can factor in the location and frequency of word occurrence, there is no way for software to accurately determine *aboutness*. [...] Metadata tags applied by humans can indicate aboutness thereby improving precision. This is one of Google's secrets for success. Google's PageRank algorithm recognizes inbound links constructed by humans to be an excellent indicator of aboutness.⁸⁷

The metadata for aboutness includes the rich content and contextual information within a Web site, including the information inherent in the site itself. For example, .edu and .ac sites are restricted to educational, academic and research institutions. They are thus more likely to host quality content. Sites with .org domains tend to be more information rich than .com or .xxx sites, so domain extensions are factors for search engine relevancies and rankings.⁸⁸ The network itself provides contextual information, as for a Web site that is densely interlinked with well ranked sites, validating the site content through its peers in an online community.

Aboutness is critical to search engine operation and a core concept in understanding how SEO functions using both technical and social standards: 'Technological constraints and social construction always interact in such a way that it is impossible to separate the two.'⁸⁹ By focusing on aboutness instead of technical attributes, which may or may not be accessible to content creators, we focus here on SEO aspects that curators can control for meaningful impact on search engine ranking of their collections and

⁸² 'Google Basics: Crawling.' *Google Webmaster Tools*, available at

<http://support.google.com/webmasters/bin/answer.py?hl=en&answer=70897&topic=2370570&ctx=topic#1>

⁸³ 'Home.' *Sitemaps*, available at <http://www.sitemaps.org/>.

⁸⁴ 'Google Webmaster Tools', available at

<http://support.google.com/webmasters/bin/answer.py?hl=en&answer=35769>.

⁸⁵ A. Hagans, 'High Accessibility is Effective Search Engine Optimization', *A List Apart*, (2005) available at: www.alistapart.com/articles/accessibilityseo.

⁸⁶ P. Morville, *Ambient Findability* (Cambridge, MA, O'Reilly Media, 2005), p. 10.

⁸⁷ *Ibid.*, p. 53.

⁸⁸ Indeed, the University of Idaho Library and other information literacy resources recommend human evaluation of domain extensions as factors for evaluating authority for Web sites (see e.g.,

<http://www.lib.uidaho.edu/classes/websiteeval.html> and

http://digitalcommons.olivet.edu/cgi/viewcontent.cgi?article=1037&context=edd_diss).

⁸⁹ See J. Bolter, 'Ekphrasis, Virtual Reality, and the Future of Writing', in G. Nunberg (ed), *The Future of the Book* (Berkeley, CA, University of California Press, 1996), p. 254.

information discoverability for scholarly research. SEO is an enhancement, not an alternative to standard best practices. It takes advantage of the quality and extent of metadata, as well as such things as the technical data that allow item level access, to extend the reach of established tools, offering library resources to a broader scholarly community online.

SEO strategies leverage best practices from the Web and curatorial practices supporting access, improving discoverability. As Diane Fulkerson argues:

One of the major problems with digital collections is the lack of an overall index to collections. For researchers to find collections relevant to their research requires them to perform a specific Internet search that includes the phrase 'digital collection.' [...] Landing pages are another option for promoting or marketing digital collections. A landing page is a one-page web advertisement you arrive at by clicking on a provided link.⁹⁰

Creating a landing page for a specific collection follows SEO best practices by creating a single point of reference with relevant contextual information providing aboutness information for the digital collection site and its contents. Creating a landing page also follows curatorial best practices by providing the meta-context and metadata that orients readers, as well as providing resource links, help on using the system, and contact information.⁹¹ A digital collection landing page supports the critical framework for contextual information in digital collections.⁹² Digital library researcher Jenn Riley, of the (US) Carolina Digital Library and Archives, stresses the importance of curated collections even in large scale projects, as usage improves for curated collections and for individual items when presented in-context along with their collection.⁹³ Landing pages for collections provide links among related resources, suggesting examples of the scholarly context. 'Scholarly data and documents are of most value when they are interconnected rather than independent.'⁹⁴

Curators may not have control over important factors for SEO related to technical optimization. Search engines rely on a number of technical indicators in indexing sites, including server response time, sitemaps, server directory structures, HTML, CSS, and the like. However, curators may be able to raise concerns regarding SEO to technical collaborators for improvement and optimization. In some cases technical concerns may not be addressed due to a lack of funding for hardware, software, personnel, or for reasons related to proprietary software and allowable configuration.

Whether or not curators have optimal technical support and whether or not it can be improved, there are ways curators can leverage their existing content expertise for SEO. As with the creation of the landing page, more about content than technology, curators can contribute information on digital collections or specific items to blogs, online newsletters, scholarly portals and other trusted sites. By contributing information with links, search engines will connect these with aboutness information. These are important factors in deciding what is included in search engine results and in ranking them. Curators can also influence this process by sharing information on sites relevant to their community of known users and by contributing to *Wikipedia*.

⁹⁰ Fulkerson, *Remote Access Technologies for Library Collections*, p. 71.

⁹¹ Report refers to each collection main page as a landing page and discusses landing pages as important for design considerations: <http://blogs.library.ucla.edu/digitallibraryprogram/2011/07/15/report-from-our-dlp-intern/>. Processing standard for creating a digital collection includes creating a landing page for promotion and marking for this consortium: <https://sites.google.com/site/oh5nextgenerationlibrary/Home/work-groups/digitization-group-1/project-steps>.

⁹² C. Lee, 'A Framework for Contextual Information in Digital Collections', *Journal of Documentation*, 67, 1 (2011), pp. 95-143, available at <http://www.ils.unc.edu/callee/p95-lee.pdf>.

⁹³ J. Riley, 'Competing Priorities: Sustainability, Growth, and Innovation In Digital Collections', CNI Spring 2012 Project Briefings (2 April 2012, Baltimore, MD), available at <http://www.cni.org/topics/digital-libraries/competing-priorities-sustainability-growth-and-innovation-in-digital-collections/> and <http://www.lib.unc.edu/users/jlriley/presentations/cni12s/rileySustainability.pptx>.

⁹⁴ Borgman, *Scholarship in the Digital Age*, p. 10.

Writing and editing *Wikipedia* articles is in keeping with best practices for SEO, curation, and the creation of scholarly or research context because *Wikipedia* is one of the most visited Web sites⁹⁵ offering a framework to provide contextual information linking to external sources, including library and digital collection Web sites. Therefore, it is an excellent resource for search engines, with a high impact for SEO, because it presents properly structured information in a technically robust manner with full context for aboutness. Thus, contributions to *Wikipedia* can effectively inform the larger information environment for SEO. *Wikipedia* should be a familiar genre for curators and scholars who have contributed to other encyclopedias. *Wikipedia* editors enforce policies, standards, and best practices for contributors. These include the 'Five Pillars':

Wikipedia is an encyclopedia. [...] Wikipedia is written from a neutral point of view. [...] Wikipedia is free content that anyone can edit, use, modify, and distribute. [...] Editors should interact with each other in a respectful and civil manner. [...] Wikipedia does not have firm rules.⁹⁶

These precepts productively orient writers and editors to *Wikipedia*'s goals and approach to contributions. *Wikipedia*'s documentation outlines general concepts for verifiability and 'no new research' as well as: recommendations on internal linking to ensure new content is organized, discoverable and supports optimal use of the full contents of *Wikipedia*; and recommendations on external linking to reference sources to show the validity of the information presented and similar best practices.⁹⁷ *Wikipedia* also offers many writing style guides, reference guides and community forums to assist writers and editors.⁹⁸ One important note: curators may write substantively about their collections and materials, but should not simply provide external links or promote their institutions, as this is a conflict of interest.^{99,100} Writing for *Wikipedia* can be an extension of existing scholarly practice, with familiar processes for review and editing, albeit online and transparently within the public sphere.¹⁰¹

The Derscheid Collection example¹⁰²

The relevance of curatorial expertise for SEO can be seen through the example of the *Derscheid Collection*, as it was first supported by conventional library practices and later extended into the online environment with digitization, metadata and SEO, all building from core curatorial values and practices. A general understanding of Jean-Marie Derscheid's career projects indicates his purpose for the collection. He began his professional life as a zoologist at the Royal Museum for Central Africa in Tervuren, Belgium (1924-1926).¹⁰³ Engaging in early administrative, policy and fundraising roles in developing and promoting the first international wildlife conservation plans for Europe,¹⁰⁴ he also published scientific

⁹⁵ *Alexa*, available at <http://www.alexacom.com/topsites>.

⁹⁶ 'Wikipedia: Five Pillars', *Wikipedia*, available at http://en.wikipedia.org/wiki/Wikipedia:Five_pillars.

⁹⁷ 'Wikipedia: Policies and Guidelines', *Wikipedia*, available at http://en.wikipedia.org/wiki/Wikipedia:Policies_and_guidelines; 'Community Portal', available at http://en.wikipedia.org/wiki/Wikipedia:Community_portal.

⁹⁸ 'Help: Contents/Editing Wikipedia', *Wikipedia*, available at http://en.wikipedia.org/wiki/Help:Contents/Editing_Wikipedia.

⁹⁹ 'Wikipedia: Conflict of Interest', *Wikipedia*, available at http://en.wikipedia.org/wiki/Wikipedia:Conflict_of_interest.

¹⁰⁰ D. Beetstra, 'User: Beetstra/Archivists', *Wikipedia*, available at <http://en.wikipedia.org/wiki/User:Beetstra/Archivists>.

¹⁰¹ See: A. Lally, 'Case Studies in Utilizing Web 2.0 to Improve the Archival Experience: Using Wikipedia to Highlight Digital Collections at the University of Washington', *The Interactive Archivist*, (18 May 2009), available at <http://interactivearchivist.archivists.org/case-studies/wikipedia-at-uw/>.

¹⁰² Some information here was included in the award nomination; see L. Taylor and D. Reboussin, *Nomination for the Center for Research Libraries' Primary Source Award, Access Category* (Gainesville, FL, University of Florida, 2011) available at <http://ufdc.ufl.edu/AA00012798>; see also 'CRL Primary Source Awards,' available at <http://www.crl.edu/focus/article/8132>.

¹⁰³ P. Brien, 'Jean-Marie Derscheid', *Biographie nationale*, 37, supplément tome 9, 1er fasc. (1971), pp. 211-235.

¹⁰⁴ IOPN, *The International Office for the Protection of Nature: Its Origin, its Programme, its Organisation* (Brussels, IOPN, 1931).

articles on a variety of species that he studied in Central Africa,¹⁰⁵ conducted the first census of Mountain Gorillas in their natural habitat and surveyed the Virunga Mountains (completing the objectives of an American Museum of Natural History expedition following Carl Akeley's death on Mt. Mikeno).¹⁰⁶ He recognized the importance of tropical forest conservation there as supporting one of only two limited habitats of endangered Mountain Gorillas¹⁰⁷ and criticized Belgian colonial agricultural policies, which promoted cultivation in these sensitive environments.¹⁰⁸ In the mid-to-late 1920s, he played a central role in the establishment of the *Parc National Albert* (now the embattled Virunga National Park), the first national park in Africa, becoming its first director in 1930.¹⁰⁹

Derscheid left this administrative post in 1933, following allegations of financial irregularities,¹¹⁰ to teach biology at the *Université coloniale* in Antwerp and continue the research that produced this collection. His academic career (and this research project) was cut short by the invasion of his native Belgium by Nazi Germany in 1940. After serving in the army medical corps, he was demobilized after the capitulation of King Leopold III at Dunkirk, and became a resistance leader in the Comet Line escape service.¹¹¹ After his arrest and imprisonment as a spy in 1941, he was taken to Germany in 1942, and executed by the Gestapo on March 13, 1944.¹¹² Incredibly, though Derscheid's home was occupied by German soldiers during the war, his papers survived and were maintained by his family.¹¹³ To the best of our knowledge, the original manuscripts remain with his heirs at the family home in Sterrebeek, Belgium.

The *Derscheid Collection* is a rich set of 20th century, scholar-curated research materials, including official colonial administrative reports (with local population census and tax collection information, for example) by District Commissioners and Governors, officials' responses to a questionnaire Derscheid created, oral histories and genealogies collected in interviews with clan chiefs and others relating to time periods from 1859-1940, and original manuscripts relating to pre-colonial and colonial era Burundi, Eastern Congo and Rwanda (then Ruanda-Urundi and Belgian Congo).¹¹⁴ Supplemented by the collector's own research notes and working papers, substantial correspondence with colonial administrators and missionaries is included. These unique materials have been used by scholars to develop key historical interpretations of the region.^{115,116,117,118,119} Derscheid's research materials remain important for interdisciplinary research in the area, extending scholarly value well beyond their original

¹⁰⁵ Citations for his published zoological work are available in the *Wikipedia* entry for Derscheid, available at http://en.wikipedia.org/wiki/Jean-Marie_Derscheid.

¹⁰⁶ P. Barclay-Smith, 'Obituary (Dr. J.M. Derscheid)', *Nature*, 157, 3977 (1946), p. 70.

¹⁰⁷ É. de Wildeman, 'A propos des Forêts Congolaises: leur Régression Nécessités de leur Étude Biologique et de la Création de Réserves Forestières', *Bulletin de la Société Royale de Botanique de Belgique*, (1928), p. 59.

¹⁰⁸ L. Dorsey, *Historical Dictionary of Rwanda* (Metuchen, NJ, Scarecrow, 1994), p. 221.

¹⁰⁹ M. Akeley, *Carl Akeley's Africa; the Account of the Akeley-Eastman-Pomeroy African Hall Expedition of the American Museum of Natural History* (New York, Dodd, Mead & Co., 1929), p. 119.

¹¹⁰ Brien, 'Jean-Marie Derscheid', p. 225.

¹¹¹ 'Liste des Personnes Ayant Aidé des Aviateurs Passés par Comète', *Kinship Belgium Web site*, available at <http://www.cometeline.org/ABChelpers.html>.

¹¹² Brien, 'Jean-Marie Derscheid', p. 231.

¹¹³ *Ibid.* pp. 229, 232.

¹¹⁴ D. Reboussin, *Compiled Guide to all 3 Derscheid Collection Microfilm Reels* (Gainesville, FL, University of Florida, 2004), available at <http://ufdc.ufl.edu/UF00103116/>.

¹¹⁵ R. Lemarchand, *Rwanda and Burundi* (New York, Praeger Publishers, 1970), available at <http://ufdc.ufl.edu/UF00103151>.

¹¹⁶ A. Des Forges and D. Newbury, *Defeat is the Only Bad News: Rwanda under Musinga, 1896 -1931* (Madison, WI, University of Wisconsin Press, 2011), p. xix.

¹¹⁷ I. Linden and J. Linden, *Church and Revolution in Rwanda* (Manchester, Manchester University Press, 1977), p. xvi.

¹¹⁸ C. Newbury, *The Cohesion of Oppression: Clientship and Ethnicity in Rwanda, 1860-1960* (New York, Columbia University Press, 1988), p. 307.

¹¹⁹ D. Wagner, *Whose History is History? A History of the Baragane People of Buragane, Southern Burundi, 1850-1932* (Madison, WI, University of Wisconsin, 1991), p. 530.

intended purpose. A portion of the collection, about 800 items including notes, illustrations and maps, was microfilmed privately by Professor René Lemarchand in 1965 as he conducted research for a scholarly monograph.¹²⁰

Lemarchand transferred ownership of three 35mm microfilm master negative reels along with a set of positive print reels (totaling 2,021 frames) to the University of Florida George A. Smathers Libraries, by our best guess during the 1970s. The libraries at Stanford University, Yale University, University of North Carolina, and the School of African and Oriental Studies at University of London also have prints from this microfilm, but its distribution was extremely limited. In 2000, Lemarchand alerted one of the authors to physical problems with the microfilm, initiating Reboussin's involvement with the collection. Digitization was not a practical option in 2000, so library staff removed the master negatives from general circulation, repaired breaks in the film, and initiated good conservation measures such as adding proper leaders, creating separate print negatives for reproduction, and making a circulating printset. The master negatives provided state of the art preservation at that time. In 2002, Reboussin and Lemarchand secured permission to copy and distribute the reproduced collection for scholarly purposes in a letter from Jean-Marie Derscheid's heir, his now deceased son Jean-Pierre. For the first time, the Libraries could create working copies without endangering the masters, allowing scholars permanent physical access by selling reels at cost to them, either directly or to their institution, or alternately loaning circulating reels via Interlibrary Loan. While these actions resolved physical access and addressed legal issues, intellectual access remained limited.

Because this is not a collection of original manuscripts, Reboussin did not create a standard finding aid.¹²¹ Instead, he expanded a carbon copy typescript guide¹²² by preparing a frame index, both to understand better this arcane, French language collection and to improve intellectual access to its hidden contents.

He compiled, edited, and verified an item by item index. This file was first distributed via e-mail, then on the African Studies Collection Web site, and was uploaded to the UFDC in November 2010.¹²³ Sustained efforts to provide intellectual access to a previously hidden scholarly collection both supported and benefited from related collaborative activities during 2011. While the authors did not strategically develop a SEO plan from the onset, together we combined technical and curatorial activities to set the stage for what became an award winning project to enhance research access to the *Derscheid Collection*. With the item by item index online, additional efforts provided further support by developing the scholarly context and contributing to improved intellectual access overall. Importantly, for example, Lemarchand generously permitted the Libraries to digitize the full text of his 1970 book, based significantly on materials in the *Derscheid Collection*.¹²⁴ *Rwanda and Burundi* was uploaded to the UFDC in November 2010 as an Open Access resource, providing an extraordinarily rich and extensive scholarly context that supports intellectual access to all of the Derscheid materials while at the same time improving access to an out of print scholarly monograph.

We initiated the Derscheid microfilm digitization project, funded with generous support from the University of Florida Center for African Studies' US Department of Education Title VI grant¹²⁵ during Spring Semester, 2011. Our work benefited from the availability of item by item metadata in the online index, allowing rapid processing and public access that summer. With a new appreciation for the value of

¹²⁰ Lemarchand, *Rwanda and Burundi*.

¹²¹ See 'Finding Aids to Manuscript and Archival Collections', *Department of Special & Area Studies Collections Web site* (Gainesville, FL, University of Florida George A. Smathers Libraries), available at <http://www.uflib.ufl.edu/spec/sascfas.htm>.

¹²² A. Des Forges, *Inventory of the J. M. Derscheid Collection on Rwanda (with Some Material on Burundi, the Congo, Uganda)*, 1967, available at <http://ufdc.ufl.edu/AA00013045>.

¹²³ Reboussin, *Compiled Guide to all 3 Derscheid Collection Microfilm Reels*, available at <http://ufdc.ufl.edu/UF00103116>.

¹²⁴ Lemarchand, *Rwanda and Burundi*, p. x.

¹²⁵ See: *National Resource Centers Program* (Washington, DC, US Department of Education, Office of Postsecondary Education, n.d.), available at <http://www2.ed.gov/programs/iegpsnrc/awards.html>.

additional contextual information that a finding aid would normally provide, Reboussin uploaded to the UFDC his translation of a French language biography from the Belgian *Biographie nationale*.¹²⁶ While it is the most extensive biography published on Jean-Marie Derscheid, Brien's focus is more personal, genealogical, and closer to hagiography than current norms of scholarship dictate. In an effort to gather a variety of professional information and references where they would be conveniently available, Reboussin created a *Wikipedia* entry for Derscheid in September 2011,¹²⁷ providing permanent, public access to the documentation he had compiled since his earliest work with the collection. The resulting dramatic change in Google search results relating to Derscheid prompted his new appreciation for the effectiveness and value of SEO techniques as a public service. The authors concluded their substantive online work with the *Derscheid Collection* by creating a landing page to bring the related contextual elements together with collection materials and as a convenient target for incoming links.

The success of efforts to attract scholarly attention (through online social media or elsewhere) is dependent on a foundation of relevant context and rich interlinked content. Once these goals are met, the attention of online communities communicates the value of resources in both a social and a technical sense as a peer network of incoming trusted source links from, for example, blogs and newsletters. This itself is a service to the larger scholarly community, builds support and strengthens SEO accomplishments. We therefore spoke with our colleagues and engaged our social networks to promote public awareness of the collection.¹²⁸ Bernard Reilly, President of the Center for Research Libraries (CRL) encouraged us to submit a case study to his organization's Primary Source Award for Access. As a result of our success in that competition,¹²⁹ the *Derscheid Collection* was cited (and the landing page linked) in the CRL and other institutional newsletters, communicating a level of peer review and acknowledgement from trusted sources to broad communities of scholars and library colleagues. The recognition also generated social media links to the collection landing page.

Reboussin announced the availability of the collection during the 54th annual US African Studies Association Conference in Washington, DC.¹³⁰ Scholars of Rwandan history, including a doctoral student who had just begun working with the *Derscheid Collection* in microfilm format, thus became aware of this newly online resource with effective endorsement from a community of respected peers. Attention to essentially social aspects of promoting the collection leads, presumably, to engagement with the scholarly community and perhaps links to the collection landing page from trusted sources. These further strengthen discoverability for such previously hidden materials, improving intellectual access for those who need it, even if they are not aware of the collection.

We can measure the success of our SEO activities in several ways. The increased prominence of a collection in search engine results is an objective of SEO implementation. Do related, relevant searches (which do not include the collection title) return links to the landing page on the first page of search results? If so, this indicates that researchers who are unaware of its existence can discover the collection. Quantitative measures are available to collection curators from server logs. For our work, this includes the automated statistical reporting through *SobekCM*.¹³¹ For example, as of July 2012 there were 4,797 total views of the *Derscheid Collection* (collection level server log results), with 31,502 cumulative views in 798

¹²⁶ See Brien, 'Jean-Marie Derscheid', pp. 211-235.

¹²⁷ See *Wikipedia* entry on Derscheid. Available at http://en.wikipedia.org/wiki/Jean-Marie_Derscheid.

¹²⁸ This included offering a workshop on SEO at our local institution: D. Reboussin and L. Taylor, 'Workshop Overview: Promote UF Research, Collections, & Online Materials with SEO and Wikipedia writing/editing' *UF Digital Collections* (February 2, 2012), available at <http://ufdc.ufl.edu/AA00008692>.

¹²⁹ 'CRL Primary Source Awards,' available at <http://www.crl.edu/focus/article/8132>.

¹³⁰ T. Spear, Roundtable discussion chair, 'Court Politics and Colonial Power in Rwanda, 1896-1931: A Discussion of *Defeat is the Only Bad News*' (ASA, 18 November 2011). Conference programme available at <http://africanstudies.terradotta.com/>.

¹³¹ 'Derscheid Usage Statistics' *UF Digital Collections*, available at <http://ufdc.ufl.edu/derscheid/usage/> and 'SobekCM: Monthly Usage Statistics,' *UF Digital Collections*, available at: <http://ufdc.ufl.edu/sobekcm/monthlystats>.

visits to the collection.¹³² These numbers indicate relatively high use considering this is a one year old, specialized, non-English language scholarly collection. Most importantly, recognition through citation in the scholarly literature is the best indicator of impact on scholarship, undoubtedly the primary goal of our efforts to provide effective intellectual access.¹³³

Conclusion

We began this chapter by describing the challenges of supporting academic access to scholarly research as the information environment becomes larger and more complex. We explored two approaches to supporting collection access, through improved tools and training researchers. These observations served as a foundation for our recommendation that librarians employ SEO techniques to extend the reach of unknown users who may benefit from improved access to the scholarly resources we curate. We offered a review of how Web search engines operate and provided examples of SEO techniques employed to promote access to the *Derscheid Collection*. Finally, we demonstrated that this previously hidden, arcane collection became more readily discoverable and its contents more easily accessible to scholars.

Each manuscript collection has unique characteristics, may pose particular problems, and suggests somewhat different treatments through the course of acquisition, processing, description, and use. While some aspects of the *Derscheid Collection* are unusual, the authors' approach to enhancing the collection's discoverability by applying a variety of simple SEO techniques can be modified and adapted according to the characteristics of (and circumstances surrounding) any other collection. The fundamentally socio-technical tools we employed are available, and in fact best suited, to the curators who best understand a collection's contents and its intellectual context. Though important and helpful, little or no technical support is necessary to engage in SEO work. It requires only a modest budget to provide this public service, offering state of the art intellectual access to anyone seeking the information in collection materials, whether or not they are aware of their specific needs, and independent of their library skills, online prowess, prior knowledge of the collection, or their authentication status with regard to library systems. The approach we presented may be applicable to librarians in African institutions, as well as to other collections where only modest resources are available.

As SEO activities support broad public access, they also enhance Open Access principles and are well-suited to improving the discoverability of Open Access resources. This essentially curatorial public service provides a more complete scholarly context to both digital and print resources within collections of related materials. While we focused on using strategies to improve access to library digital collections, the value of SEO work also directly relates to the Open Access movement wherein the value of a work is enhanced by creating access through curatorial work and by providing context for improved discoverability. In this way, SEO serves the larger Open Access movement that is part of library and academic work more generally, which relies on the creation and distribution of knowledge that is vetted through peer review.¹³⁴

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¹³² See UFDC, 'History of Collection-Level Usage', *Derscheid Collection* (Gainesville, FL, University of Florida Libraries, 2012), available at <http://ufdc.ufl.edu/l/derscheid/usage/views>.

¹³³ For example, see: D. Kiwuka, *Ethnic Politics and Democratic Transition in Rwanda* (London, Routledge, 2012), pp. 173, 192.

¹³⁴ L. Taylor and B. Riley, 'Open Source and Academia: how Composition Benefits from the Open Source Model', *Computers and Composition Online* (Spring 2004), available at <http://www.bgsu.edu/cconline/tayloriley/intro.html>.