Beyond Clicks, Likes, and Downloads: Identifying Meaningful Impacts for Digitized Ethnographic Archives

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RÉSUMÉ Au courant des dernières années, les bibliothèques, les archives et les musées ont fait de grands progrès pour numériser et rendre accessibles en ligne les archives ethnographiques. Alors que ces efforts ont permis de nouvelles possibilités en ce qui concerne la gestion des collections, la livraison du contenu et l'interaction des usagers, l'accès aux collections du patrimoine ethnographique présente des défis d'évaluation uniques étant donné la nature sensible de leur contenu, leurs contextes de création, et leurs parfois petites, mais essentielles, communautés d'utilisation. Les archives ethnographiques entretiennent souvent des liens avec leurs communautés autochtones d'origine, mais les intendants des collections manquent de cadres spécialisés pour mesurer et évaluer l'impact qui permettraient de déterminer les enjeux politiques et culturels complexes qui découlent de l'accès à de tels items. Les modèles existants pour permettre une évaluation de l'impact estiment de façon inadéquate la valeur de l'accès aux collections ethnographiques numérisées. À mesure que les utilisateurs accèdent de plus en plus au matériel ethnographique numérisé, des méthodes plus systématiques pour évaluer les résultats et les impacts de l'accès numérique à ces collections doivent être mises en place afin d'aider les gestionnaires des institutions et des dépôts à prioriser les collections à être numérisées et à déterminer comment le faire de façon éthique. En réponse, cet article se sert d'une étude d'une durée d'un an avec de grandes institutions non-autochtones et leur personnel afin d'identifier et de discuter de six champs d'impact significatifs – *le savoir, le discours professionnel, les attitudes, la capacité institutionnelle, les politiques* et *les rapports humains* – qui peuvent servir à contextualiser et à examiner les résultats de la numérisation des archives ethnographiques. Nous débutons en présentant un aperçu des archives ethnographiques, de leurs utilisateurs et de leurs utilisations. Nous identifions ensuite les cadres, méthodes et études publiées pertinents portant sur l'évaluation de l'impact des ressources numériques et nous montrons comment ils sont inadéquats pour les collections ethnographiques. Nous menons alors une discussion sur les méthodes pour notre étude et pour chacun des six champs d'impact, ainsi que des indicateurs potentiels pour chaque champ. Enfin, nous présentons les implications et les défis de ces champs d'impact pour démontrer la valeur des archives numérisées au-delà des mesures quantitatives des clics, des mentions j'aime et des téléchargements.

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ABSTRACT In recent years, libraries, archives, and museums have made great strides in digitizing and providing online access to ethnographic archives. While these efforts have enabled new possibilities for collections management, content delivery, and user interaction, access to ethnographic heritage collections presents unique assessment challenges because of the sensitive nature of their content, the contexts of their creation, and their sometimes small but vital communities of use. Ethnographic archives often retain links to Indigenous source communities, yet stewards of collections lack specialized impact evaluation and assessment frameworks to account for the complex political and cultural issues that access to such items entails. Current models for impact assessment inadequately track the value of access to digitized ethnographic holdings. As users increasingly access digitized ethnographic materials, more systematic methods to assess the outcomes and impacts of digital access to these collections need to be in place to help institutions and repository managers prioritize what holdings to digitize and how to do so ethically. In response, this article draws on a year-long study with large non-Indigenous institutions and their staff to identify and discuss six areas of meaningful impacts – *knowledge, professional discourse, attitudes, institutional capacity, policy,* and *relationships* – that can be used to frame and examine the outcomes of digitizing ethnographic archives. We begin by presenting an overview of ethnographic archives and their users and uses. We then identify relevant frameworks, methods, and published studies on impact assessment of digital resources and show how they are inadequate for ethnographic collections. This is followed by a discussion of the methods for our study and each of the six areas of impact, as well as potential indicators for each area. Finally, we present the implications and challenges of these areas of impact for demonstrating the value of digitized archives beyond quantitative metrics of clicks, likes, and downloads.

Introduction

Libraries, archives, and museums (LAMs) across North America are making great strides in digitizing their archival holdings. The availability of digital surrogates has encouraged the creation of digital projects that facilitate collections management and content delivery. In recent years, we have witnessed sustained scholarly investigations into both the improvement in online access to content and the effect digital surrogates are having on how archival users access, appropriate, and utilize digitized archives. More often than not, digital access is seen as a force for good and a means for LAMs to creatively reach wider audiences and communities.

In this article, we discuss the impact of access on a subset of digitized archives – those that document Native American and Indigenous communities. Ethnographic archives, as we refer to them here, are records kept in libraries, archives, and museums that often present cultural sensitivity issues given the complicated nature of their content and the context of their creation. Digitized ethnographic archives have become key to sharing knowledge with Native American and Indigenous communities. While there are many current efforts to develop systems and platforms that enable respectful

access to and use of culturally sensitive content, little has been done to assess these or other digitization endeavours.

None of the institutions included in this study have digitized the entirety of their holdings. Repositories need more systematic ways to assess the outcomes and impacts of digital access to these collections in order to prioritize what and how to digitize. Repository managers, archivists, and curators must convince grant agencies or skeptical institutional leadership of the value of digitization. These cultural heritage professionals and administrators are also called on to balance the desire for open access with the ethical requirements of culturally sensitive content. This is an especially critical issue as the overwhelming majority of ethnographic collections are kept in non-tribal and Western institutions, and those responsible for their preservation and access are non-Indigenous professionals.

According to the Society of American Archivists' Code of Ethics, "archivists promote the respectful use of culturally sensitive materials in their care by encouraging researchers to consult with communities of origin, recognizing that privacy has both legal and cultural dimensions."[1] Thus, archivists desire to learn about, and consequently respond to, potential negative impacts and cultural sensitivity concerns regarding online posting of ethnographic content (such as inadvertently giving access to images or texts of religious rituals meant for specific community members, not for general viewing). Our previous analysis showed that little is known about what happens to ethnographic digital surrogates when they are placed online.[2] This gap inspired us to further analyze our data to explore the possibility of creating systematic mechanisms for gathering, documenting, or assessing the impact of access and use of digitized ethnographic archives.

Users increasingly access ethnographic materials digitally, but the cultural implications of this shift are little understood. Recent studies have noted the inability of many institutions to assess the value of their work beyond simple usage statistics and frequency of website visits.[3] While impact measures

1 Society of American Archivists, "Code of Ethics for Archivists," accessed 14 March 2017, http://www2.archivists.org/statements/saa-core-values-statement-and-code-of-ethics.

2 Diana E. Marsh, Ricardo L. Punzalan, Robert Leopold, Brian Butler, and Massimo Petrozzi, "Stories of Impact: The Role of Narrative in Understanding the Value and Impact of Digital Collections," *Archival Science* 16, no. 4 (December 2016): 327–72; Diana E. Marsh, Ricardo L. Punzalan, and Robert Leopold, "Studying the Impact of Digitized Ethnographic Collections: Implications for Practitioners," *Practicing Anthropology* 37, no. 3 (Summer 2015): 26–31; Ricardo L. Punzalan and Brian Butler, "Valuing Our Scans: Assessing the Value and Impact of Digitizing Ethnographic Collections for Access," in *MW2014: Museums and the Web 2014 Proceedings* (2–5 April 2014, Baltimore, MD), ed. N. Proctor & R. Cherry, accessed 4 September 2017, http://mw2014.museumsandtheweb.com/paper/valuing-our-scans-assessing-the-value-and-impact-of-digitizing-ethnographic-collections-for-access.

3 See, for example, James Eric Davies, "What Gets Measured, Gets Managed: Statistics

targeting digital resources such as books and scholarly journals are available, they often address only broad or general areas of concern and are inadequate to meaningfully assess the value of access to digitized ethnographic holdings.[4] Digital ethnographic objects, which often retain links to Indigenous source communities, lack any specialized impact and assessment measures that account for the complex political and cultural issues that access to such items entails.[5]

Assessments rely on indicators of impact that in turn can be used to verify significant shortcomings, achievements, and outcomes. These indicators need to be established prior to evaluation and must reflect the values and aspirations of multiple stakeholders. In this article, we present our analysis of interviews and focus group discussions with cultural heritage professionals and administrators from eight large non-Indigenous repositories with significant ethnographic holdings. In so doing, we identify and discuss six categories that might inform the documentation, assessment, and evaluation of access to and use of digitized ethnographic materials. We begin by defining ethnographic archives and contextualizing the users and uses of this genre of archival holdings. This is followed by an overview of relevant frameworks, methods, and published studies on impact assessment and a discussion of how we can build on the achievements and insights of those existing models and tools. We then describe our study and the six areas of impact that emerged from this research and their possible indicators. Finally,

and Performance Indicators for Evidence Based Management," *Journal of Librarianship and Information Science* 34, no. 3 (September 2002): 129–33; Bruce T. Fraser, Charles R. McClure, and Emily H. Leahy, "Toward a Framework for Assessing Library and Institutional Outcomes," *portal: Libraries and the Academy* 2, no. 4 (November 2002): 505–28; Amos Lakos and Shelly E. Phipps, "Creating a Culture of Assessment: A Catalyst for Organizational Change," *portal: Libraries and the Academy* 4, no. 3 (July 2004): 345–61; Wendy M. Duff, Jean Dryden, Carrie Limkilde, Joan Cherry, and Ellie Bogomazova, "Archivists' Views of User-Based Evaluation: Benefits, Barriers, and Requirements," *American Archivist* 71, no. 1 (April 2008): 144–66; Brinley Franklin and Terry Plum, "Assessing the Value and Impact of Digital Content," *Journal of Library Administration* 48, no. 1 (July 2008): 41–57; Lisa R. Carter, "Articulating Value: Building a Culture of Assessment in Special Collections," *RBM: A Journal of Rare Books, Manuscripts, and Cultural Heritage* 13, no. 2 (Fall 2012): 89–99; Joyce Chapman and Elizabeth Yakel, "Data-Driven Management and Interoperable Metrics for Special Collections and Archives User Services," *RBM: A Journal of Rare Books, Manuscripts, and Cultural Heritage* 13, no. 2 (Fall 2012): 129–51; Lorna M. Hughes, ed., *Evaluating and Measuring the Value, Use and Impact of Digital Collections* (London: Facet Publishing, 2012); and Wendy Duff, Andrew Flinn, Karen Suurtamm, and David Wallace, "Social Justice Impact of Archives: A Preliminary Investigation," *Archival Science* 13, no. 4 (December 2013): 317–48.

4 Brian Kelly, *Evidence, Impact, Metrics: Final Report* (UKOLN, 2012), accessed 14 March 2017, http://www.ukoln.ac.uk/isc/evidence-impact-metrics-2011/evidence-impact-metrics-final-report.pdf.

5 Marsh, Punzalan, and Leopold, "Studying the Impact of Digitized Ethnographic Collections."

we discuss the implications for digitized ethnographic archives and the challenges associated with the assessment of these six areas of impact.

Ethnographic Archives

Most Native American and Indigenous archival materials were created in the context of ethnographic field documentation and recording activities. We define ethnographic archives as records in diverse formats (i.e., manuscripts, sound recordings, moving images, and photographs) that document the resources, history, and culture of Native American and Indigenous cultures of the world.[6] While many of these archival materials were produced in the context of anthropological field research, many others were generated by government or private entities, or accumulated by collectors and hobbyists. More recently, however, repositories have begun to acquire the papers of community-based and Indigenous scholars. Ethnographic archives are kept in LAMs around the world. The Council for the Preservation of Anthropological Records (CoPAR) provides a directory of ethnographic archives, which illustrates the range and variety of institutions tasked to preserve these types of records.[7]

Ethnographic archival materials are consulted for many reasons. According to Robert Leopold, ethnographic archives are crucial to the study of intellectual history and the evolution of anthropology as a discipline by examining previously created research data on communities and conducting comparative analyses of Indigenous cultures.[8] Increasingly, users of ethnographic archives are not limited to the disciplines or entities that created them. In fact, many Native American, or source, communities rely on these archival records for varied reasons, including revitalizing endangered languages and traditions, seeking legal reparations, facilitating claims to support federal acknowledgement applications, protecting sovereign resources and lands, and researching their own histories and cultures. Hence, the uses and users of ethnographic archives can be as diverse as the cultures and formats they represent. Such collections can also have small communities of users who enable vast cultural or political changes by mobilizing them. Because of this acknowledgment of

6 Shepard Krech III and William C. Sturtevant, "The Uses of Ethnographic Records," in *Preserving the Anthropological Record*, ed. Sydel Silverman and Nancy J. Parezo (New York: Wenner-Gren Foundation for Anthropological Research, 1995): 85–94; First Archivists Circle, "Protocols for Native American Archival Materials," accessed 14 March 2017, http://www2.nau.edu/libnap-p/protocols.html; and American Philosophical Society, "Protocols for the Treatment of Indigenous Materials," *Proceedings of the American Philosophical Society* 58, no. 4 (2014): 411–20.

7 Council for the Preservation of Anthropological Records, "Ethnographic Archives," accessed 18 March 2017, http://copar.org/links.htm.

8 Robert Leopold, "The Second Life of Ethnographic Fieldnotes," *Ateliers d'anthropologie* 32 (2008): 4.

the multiple uses and users of ethnographic archives, we argue that impact assessments should reflect and account for this diversity, and should move beyond quantitative measures.

Over the past two decades, many important community-driven digital projects have made it possible for Native American and Indigenous communities to establish formal collaborations with cultural heritage institutions in possession of their ethnographic records.[9] In some instances, Native American communities have greater control over the stewardship of digital materials related to their history and culture. Projects such as Mukurtu,[10] the Inuvialuit Living History,[11] the Plateau Peoples' Web Portal,[12] Local Contexts,[13] and the Reciprocal Research Network[14] provide networks and platforms that support Indigenous knowledge systems and values alongside ethical digital access to the holdings of various LAMs.[15] The "Protocols for Native American Archival Materials" (PNAAM) provide general guidance on respectful access to and representation of Native American collections in heritage repositories.[16] The 2015 special issue of the *Journal of Western Archives* has examined subsequent efforts to decolonize the archival field and has surveyed the current state of archival scholarship on this topic through a series of articles and case studies.[17] The American Philosophical Society (APS) has published its own protocols and procedures for respectfully managing Native American materials

9 See, for example, Kate Hennessy, "Virtual Repatriation and Digital Cultural Heritage: The Ethics of Managing Online Collections," *Anthropology News* 50, no. 1 (April 2009): 5–6; and Jennifer R. O'Neal, "Going Home: The Digital Return of Films at the National Museum of the American Indian," *Museum Anthropology Review* 7, no. 1–2 (Spring–Fall 2013): 166–83.

10 Murkutu, "Welcome Murkutu CMS 2.0," accessed 14 March 2017, http://www.mukurtu.org.

11 Inuvialuit Cultural Resource Center, "Inuvialuit Pitqusiit Inuuniarutait: Inuvialuit Living History," accessed 18 March 2017, http://www.inuvialuitlivinghistory.ca.

12 Plateau Peoples' Web Portal, accessed 18 March 2017, http://plateauportal.wsulibs.wsu.edu.

13 Local Contexts, accessed 18 March 2017, http://www.localcontexts.org.

14 Reciprocal Research Network, "First Nations Items from the Northwest Coast," accessed 18 March 2017, https://www.rrncommunity.org.

15 Susan Rowley, "Building an On-Line Research Community: The Reciprocal Research Network," in *Museums and the Web 2010 Proceedings* (13–17 April 2010, Denver, CO), ed. Jennifer Trant and David Bearman (Toronto: Archives & Museum Informatics, 2010), accessed 14 March 2017, http://www.archimuse.com/mw2010/papers/rowley/rowley.html; Kimberly Christen, "Opening Archives: Respectful Repatriation," *American Archivist* 74 (Spring/Summer 2011): 185–210; and Kate Hennessy, Ryan Wallace, Nicholas Jakobsen, and Charles Arnold, "Virtual Repatriation and the Application Programming Interface: From the Smithsonian Institution's MacFarlane Collection to 'Inuvialuit Living History,'" in *Museums and the Web 2010 Proceedings*, ed. Jennifer Trant and David Bearman (Toronto: Archives & Museum Informatics, 2010), accessed 14 March 2017, http://www.museumsandtheweb.com/mw2012/papers/virtual_repatriation_and_the_application_progr.

16 First Archivists Circle, "Protocols for Native American Archival Materials."

17 *Journal of Western Archives* 6, no. 1 (2015), accessed 28 July 2017, http://digitalcommons.usu.edu/westernarchives/vol6/iss1.

in its care.[18] The interdisciplinary volume *Identity Palimpsests: Archiving Ethnicity in the U.S. and Canada* contains a range of scholarship on the ways in which "archives are mobilized to discover or recover evidence" and "memory" across a range of "ethnic," cultural, or community archives.[19] These efforts in turn encourage the creation of digital projects that range from virtual exhibitions to online catalogues to digital repatriations.

Ethnographic archives are thus subject to specific needs and concerns owing to their conditions of creation, custodial history, and the needs of particular designated communities that use the materials. Because Indigenous archives are kept across LAMs, PNAAM noted the importance of recognizing cultural sensitivity issues that might arise around public access:

> Most archives and libraries hold information of a confidential, sensitive, or sacred nature. The amount of this material may constitute a small percentage of the entire collection. For Native American communities the public release of or access to specialized information or knowledge – gathered with and without informed consent – can cause irreparable harm. Instances abound of misrepresentation and exploitation of sacred and secret information. Each community will understand and use the term "culturally sensitive" differently, although there are broad areas of common agreement for Native Americans about this issue.[20]

Digital access can thus have negative impacts, particularly for Indigenous peoples whose cultural heritage receives increased exposure in an online environment. Indigenous individuals browsing archives and special collections online may inadvertently encounter culturally sensitive materials or access specialized knowledge that their communities ordinarily manage through culturally specific protocols. As Kimberly Lawson (Heiltsuk), a First Nations librarian from British Columbia, explains:

> Indigenous people create, organize, use, and manage knowledge and information resources differently from Western libraries and archives. Privileged access to information based on gender, initiate status, age, clan, society, and role can be a form of protection for a community, in contrast to the American democratic traditions of open access to information resources and intellectual freedom.[21]

18 American Philosophical Society, "Protocols for the Treatment of Indigenous Materials." See also Timothy B. Powell, "Digital Knowledge Sharing: Forging Partnerships between Scholars, Archives, and Indigenous Communities," *Museum Anthropology Review* 10, no. 2 (December 2016): 66–90.

19 Margaret Hedstrom, cited in Dominique Daniel and Amalia S. Levi, eds., *Identity Palimpsests: Archiving Ethnicity in the U.S. and Canada* (Sacramento, CA: Litwin Books, 2014): 228.

20 First Archivists Circle, "Protocols for Native American Archival Materials."

21 Karen J. Underhill, "Protocols for Native American Archival Materials," *RBM: A Journal of Rare Books, Manuscripts, and Cultural Heritage* 7, no. 2 (2006): 138; summarizing Kimberly L. Lawson, "Precious Fragments: First Nations Materials in Archives, Libraries

Many issues therefore complicate efforts to evaluate, preserve, and provide access to Native American and Indigenous archives.[22] Sally Leiderman illustrates this point, noting that "racism, other methods of oppression, white privilege and access to power always influence evaluation."[23] Because of the nature of evaluations (i.e., exercising judgment), certain worldviews are explicitly privileged over others, and white privilege is frequently embedded in the underlying assumptions of typical evaluations.[24] LAM scholars have therefore reflected on the potential outcomes of digitization and online delivery of ethnographic content.[25] A number of reports simultaneously point to the contentious nature and the liberating effects of digital projects involving ethnographic collections.[26] In addition, digitized ethnographic collections stimulate discussions around notions of institutional ownership and authority

and Museums" (MA thesis, University of British Columbia, 2004), v–ix, 1; cited in Marsh et al., "Stories of Impact," 365.

22 Nancy J. Parezo, "Preserving Anthropology's Heritage: CoPAR, Anthropological Records, and the Archival Community," *American Archivist* 62, no. 2 (Fall 1999): 271–306; Nancy J. Parezo, Don D. Fowler, and Sydel Silverman, "Preserving the Anthropological Record: A Decade of CoPAR Initiatives," *Current Anthropology* 44, no. 1 (February 2003): 111–16; Alison K. Brown and Laura Peers (with members of the Kainai Nation), *"Pictures Bring Us Messages": Photographs and Histories from the Kainai Nation* (Toronto: University of Toronto Press, 2006); and Sherelyn Ogden, "Understanding, Respect, and Collaboration in Cultural Heritage Preservation: A Conservator's Developing Perspective," *Library Trends* 56, no. 1 (Summer 2007): 275–87.

23 Sally Leiderman, "Doing Evaluations Differently," in *Flipping the Script: White Privilege and Community Building*, ed. Maggie Potapchuk, Sally Leiderman, Donna Bivens, and Barbara Major (Silver Spring, MD, and Conshohocken, PA: MP Associates, Inc. and the Center for Assessment and Policy Development, 2005): 91.

24 Ibid., 93–94.

25 Joshua Bell, Kimberly Christen, and Mark Turin, "Introduction: After the Return," *Museum Anthropology Review* 7, no. 1–2 (2013): 1–21.

26 Loriene Roy and Mark Christal, "Digital Repatriation: Constructing Culturally Responsive Virtual Museum Tour," *Journal of Library and Information Science* 28, no. 1 (April 2002): 14–18; Martin Nakata, Vicky Nakata, Gabrielle Gardiner, Jill McKeough, Alex Byrne, and Jason Gibson, "Indigenous Digital Collections: An Early Look at the Organisation and Culture Interface," *Australian Academic and Research Libraries* 39, no. 4 (December 2008): 223–36; Jeremy Pilcher and Saskia Vermeylen, "From Loss of Objects to Recovery of Meanings: Online Museums and Indigenous Cultural Heritage," *M/C Journal* 11, no. 6 (2008), accessed 14 January 2014, http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/94; Saskia Vermeylen and Jermey Pilcher, "Let the Objects Speak: Online Museums and Indigenous Cultural Heritage," *International Journal of Intangible Cultural Heritage* 4 (2009): 60–78; Ramesh Srinivasan, Robin Boast, Jonathan Furner, and Katherine M. Becvar, "Digital Museums and Diverse Cultural Knowledges: Moving Past the Traditional Catalog," *Information Society* 25, no. 4 (July 2009): 265–78; Christen, "Opening Archives"; Peter Dawson, Richard Levy, and Natasha Lyons, "'Breaking the Fourth Wall': 3D Virtual Worlds as Tools for Knowledge Repatriation in Archaeology," *Journal of Social Archaeology* 11, no. 3 (October 2011): 387–402; and Robert Leopold, "Articulating Culturally Sensitive Knowledge Online: A Cherokee Case Study," *Museum Anthropology Review* 7, no. 1–2 (Spring–Fall 2013): 85–104.

versus Indigenous knowledge and history; the relationship of archival collections kept in repositories with their source communities; and the ethics of the open and unhindered display of Indigenous artifacts.[27] Together, these discussions convey a range of cultural sensitivity concerns.

Thus, the incentives that typically drive academic and research libraries to digitize monographs and scholarly journals differ from motivations for digitizing and making available ethnographic archives via the Internet. Their legal frameworks also differ. Corporate or personal archival records have their own copyright and privacy complications, which are completely different from those within the context of Indigenous rights.[28] Projects such as Local Contexts and the Traditional Knowledge License and Label platform are thus seeking to reimagine intellectual property frameworks for preserving, managing, and reusing digital cultural heritage in order to more ethically and responsively meet the needs of Indigenous communities and cultural heritage repositories.[29]

Impact Matters

Understanding impact is vital to articulating arguments for sustained project funding and resources, building evidence of the impact of digital resources, ensuring public funds are being responsibly spent, and further stimulating innovation and research.[30] Current impact assessment and evaluation models, resources, and toolkits provide crucial foundations and inspiration. User-focused evaluation grounded in robust scholarship is an essential component of a sustainable digital infrastructure. By developing user-centred evaluation toolkits to assess the impact of digitized resources, LAMs can better incorporate considerations such as user perspectives, community engagement, and inclusion when expanding their digital capacity. Furthermore, LAMs also require evidence to assess the value and importance of providing online access to content, as well as to support arguments for continued preservation and funding. In this section, we offer a definition of impact and discuss existing assessment and evaluation models, approaches, and toolkits.

27 Pilcher and Vermeylen, "From Loss of Objects to Recovery of Meanings"; Vermeylen and Pilcher, "Let the Objects Speak"; Christen, "Opening Archives"; and Leopold, "Articulating Culturally Sensitive Knowledge Online."

28 Michael F. Brown, "Heritage Trouble: Recent Work on the Protection of Intangible Cultural Property," *International Journal of Cultural Property* 12, no. 1 (February 2005): 40–61.

29 Kimberly Christen, "Tribal Archives, Traditional Knowledge, and Local Contexts: Why the "s" Matters," *Journal of Western Archives* 6, no. 1 (2015): article 3, accessed 19 March 2017, http://digitalcommons.usu.edu/westernarchives/vol6/iss1/3.

30 Ben Showers, "A Strategic Approach to the Understanding and Evaluation of Impact," in *Evaluating and Measuring the Value, Use and Impact of Digital Collections*, ed. Lorna M. Hughes (London: Facet Publishing, 2012): 64–65.

Defining Impact

Our understanding of "impact" is focused on observable *changes* and *effects* that would not have occurred in the absence of a given digital resource or service. This approach is largely inspired by Simon Tanner[31] and Peter Brophy,[32] who offer distinct yet complementary definitions. For Tanner, impact refers to "the measurable outcomes arising from the existence of a digital resource that demonstrate a change in the life or life opportunities of the community for which the resource is intended."[33] With digital ethnographic resources, however, it is important to be mindful of the possibility that they may have unintended impacts and may even affect unintended users. Brophy considers a range of outcomes, effects, and time frames and thus defines impact as "any *effect* of a service, product or other 'event' on an individual or group. It may be positive or negative; may be what was intended or something entirely different; may result in changed attitudes, behaviours, outputs (i.e., what an individual or group produces during or after interaction with the service); may be short or long term; may be critical or trivial."[34]

With such complexity, Ben Showers notes that "impact as a concept is problematic, as developing and understanding of 'impact' is often entwined with the need to address several other key concepts … in digital resources."[35] Along similar lines, Lorna Hughes has argued that "value is subjective, changes over time and has different meanings that are contingent on external factors."[36] However, both Tanner and Brophy are helpful in identifying the important layers and elements for understanding the impacts that matter for various stakeholders. Their approaches balance the multiple and sometimes competing values of these groups as well as the levels of reception of a given digital project over time. Together, these sources present an understanding of impact that is focused on meaningful changes or effects of digital resources and services. Furthermore, they point toward the need to involve multiple stakeholders and to consider diverse perspectives at various points in time.

31 Simon Tanner, *Measuring the Impact of Digital Resources: The Balanced Value Impact Model* (London: King's College London, 2012), accessed 7 September 2017, https://www.kdl.kcl.ac.uk/fileadmin/documents/pubs/BalancedValueImpactModel_SimonTanner_October2012.pdf.

32 Peter Brophy, "The Development of a Model for Assessing the Level of Impact of Information and Library Services," *Library & Information Research* 29, no. 93 (Winter 2005): 43–49.

33 Tanner, *Measuring the Impact of Digital Resources*, 9.

34 Brophy, "The Development of a Model for Assessing the Level of Impact of Information and Library Services," 44; also cited in Duff et al., "Social Justice Impact of Archives."

35 Showers, "A Strategic Approach to the Understanding and Evaluation of Impact," 64.

36 Hughes, *Evaluating and Measuring the Value, Use and Impact of Digital Collections,* 6.

Existing Resources: Toolkits, Models, and Shortcomings

We found a wide variety of resources that are useful for recognizing, measuring, and articulating impact. Recent notable efforts in measuring the impact of digital cultural heritage projects, services, and collections have offered conceptual frameworks for planning, structuring, and organizing evaluation efforts. These, in turn, help cultural heritage institutions determine the value of digital services and resources to a variety of constituents.[37] The resources we present here are not comprehensive, but they are representative models and projects that illustrate impact assessments. They fall into two categories: toolkits ready to be implemented by institutions, and broader resources that act as a more general "how-to" guide by providing recommendations and resources. The breadth and variety of these toolkits and resources are promising. They illustrate the applications of evaluation and assessment within LAMs. These models and projects provide a useful starting point for our work, although their scope does not respond directly to the unique needs of ethnographic archives.

Toolkits

Toolkits are ready-made resources that contain instruments to help institutions gather and analyze use and user data. Two main toolkits are most applicable

37 See Tanner, *The Balanced Value Impact Model*; Oxford Internet Institute, TIDSR: Toolkit for the Impact of Digitised Scholarly Resources, accessed 17 March 2017, http://microsites.oii.ox.ac.uk/tidsr; Eric T. Meyer, *Splashes and Ripples: Synthesizing the Evidence on the Impacts of Digital Resources* (London: Joint Information Systems Committee, 20 May 2011), accessed 17 March 2017, http://ssrn.com/abstract=1846535; Wendy M. Duff, Elizabeth Yakel, Helen R. Tibbo, Joan M. Cherry, Aprille McKay, Magia G. Krause, and Rebecka Sheffield, "The Development, Testing, and Evaluation of the Archival Metrics Toolkits," *American Archivist* 73, no. 2 (Fall/Winter 2010): 569–99; Elizabeth Yakel and Helen Tibbo, "Standardized Survey Tools for Assessment in Archives and Special Collections," *Performance Measurement and Metrics* 11, no. 2 (2010): 211–22; Elizabeth Yakel, Wendy Duff, Helen Tibbo, Adam Kriesberg, and Amber Cushing, "The Economic Impact of Government Archives," *American Archivist* 75, no. 2 (Fall/Winter 2012): 297–325; *Better Evaluation: Sharing Information to Improve Evaluation*, accessed 17 March 2017, http://www.betterevaluation.org/en; Fraser, McClure, and Leahy, "Toward a Framework for Assessing Library and Institutional Outcomes"; Kelly, *Evidence, Impact, Metrics*; Digital Library Federation, Assessment Interest Group Analytics Working Group, "Best Practices for Google Analytics in Digital Libraries" (Digital Library Federation, 2015), accessed 17 March 2017, https://docs.google.com/document/d/1QmiLJEZXGAY-s7BG_nyF6EUAqcyH0mhQ7j2VPpLpxCQ/edit; and Merilee Proffitt and Jennifer Schaffner, "The Impact of Digitizing Special Collections on Teaching and Scholarship: Reflections on a Symposium about Digitization and the Humanities" (Dublin, OH: OCLC, 2008), accessed 5 September 2017, http://www.oclc.org/content/dam/research/publications/library/2008/2008-04.pdf.

here, but they lack the cultural specificity required when evaluating ethnographic collections access.

Developed by the Oxford Internet Institute in 2008, the online resource TIDSR: Toolkit for the Impact of Digitised Scholarly Resources is meant to be an easy-to-use guide for measuring the various impacts of online scholarly resources. The toolkits of TIDSR and Archival Metrics[38] are geared specifically toward helping institutions gather data to assist in evaluation and assessment. TIDSR provides tools for a mixed-methods approach to impact assessment, addressing various facets of quantitative and qualitative research methods. Quantitative research methods specifically addressed include altmetrics, analytics, bibliometrics, scientometrics, log file analysis, questionnaires, surveys, webometrics, and Web 2.0 tools (i.e., social media). Specific qualitative research methods covered in this toolkit include content analysis, focus groups, interviews, referrer analysis, user feedback, and audience analysis. While TIDSR provides useful tools for impact assessment, its contents are too broad to address the specific needs of culturally sensitive materials and would have to be tailored to meet those needs.

The second, Archival Metrics, promotes a culture of assessment with a set of standardized toolkits for user-based evaluations. These toolkits provide institutions with specific instruments and methods for evaluating various archival services. They include user-based tools to help archivists evaluate the quality and usability of institutional services, finding aids, and websites. In creating the user-based assessment toolkits, the project leaders targeted a variety of user groups, including on-site and online researchers, teachers and instructors, and students. They also produced an economic impact survey toolkit and a guide for conducting focus group discussions. While not addressing the specific needs of ethnographic archives collections, these examples serve as useful models for the creation of more specialized user-based assessment toolkits.[39]

"*How-to" models and projects*

There are seven "how-to" models and projects that present guides to evaluation and assessment work. These models and projects include Tanner's *Measuring the Impact of Digital Resources: The Balanced Value Impact Model* (BVIM),[40] Eric T. Meyer's "Splashes and Ripples: Synthesizing

38 Duff et al., "The Development, Testing, and Evaluation of the Archival Metrics Toolkits"; Yakel and Tibbo, "Standardized Survey Tools for Assessment in Archives and Special Collections"; and Yakel et al., "The Economic Impact of Government Archives."

39 Ibid.

40 Tanner, *The Balanced Value Impact Model*.

the Evidence on the Impacts of Digital Resources,"[41] Better Evaluation,[42] E-Metrics,[43] Brian Kelly's *Evidence, Impact, Metrics*,[44] the Digital Library Federation Assessment Interest Group's "Best Practices for Google Analytics in Digital Libraries,"[45] and the SAA-ACRL/RBMS Joint Task Force on the Development of Standardized Statistical Measures for Public Services in Archival Repositories and Special Collections Libraries.[46] As with the toolkits, these resources provide starting points for the development of more content-specific tools and resources.

BVIM is the result of an Arcadia-funded project meant to provide a model for measuring the impact of digital resources for institutions specializing in the cultural, heritage, academic, or creative industries. BVIM acts as an aid in impact assessment, and is meant to be applied in five core functional stages: context; analysis and design; implementation; outcomes and results; and review and respond. The application of this model helps researchers identify the various ways in which value and impact can be derived from digital resources. Tanner notes four types of impact assessments: environmental, social, health, and economic. An additional designation for assessments that combine various facets is also suggested – something we draw on here and discuss in more detail below.[47]

To help build a more empirically based understanding of impacts measured by both qualitative and quantitative methods, "Splashes and Ripples: Synthesizing the Evidence on the Impacts of Digital Resources" synthesizes data from the Joint Information Systems Committee (JISC) digitization and e-content programs to better understand usage patterns of digital collections in research and teaching. Meyer utilizes data from 12 JISC-funded digitization projects (five of which used methods in the TIDSR) to measure the types of impacts identifiable based on the evidence collected about the digital resources. Meyer identifies numerous recommendations to enhance impacts for digital resource providers, improved measurement, and sustainability of digital resources. Though Meyer identifies various methods to gather evidence of different types of impacts, cultural impact is not addressed.[48] The contexts for

41 Meyer, *Splashes and Ripples*.
42 See Better Evaluation.
43 Fraser, McClure, and Leahy, "Toward a Framework for Assessing Library and Institutional Outcomes."
44 Kelly, *Evidence, Impact, Metrics*.
45 Digital Library Federation, "Best Practices for Google Analytics in Digital Libraries."
46 Society of American Archivists, "SAA-ACRL/RBMS Joint Task Force on Public Services Metrics," accessed 18 March 2017, http://www2.archivists.org/groups/saa-acrlrbms-joint-task-force-on-public-services-metrics.
47 Tanner, *The Balanced Value Impact Model*.
48 Meyer, *Splashes and Ripples*.

teaching using ethnographic resources are also often non-traditional (such as the Thanksgiving holiday in the US and in local tribal curricula).

Better Evaluation, an international collaboration, provides resources to improve evaluation practices and theories by sharing and generating information about methods, processes, and approaches to evaluation.[49] Emphasizing a broad scope for impact evaluation, Better Evaluation looks at the role of intervention as well as "unintended impacts."[50] This is particularly important for considering the negative impacts digitization can have on ethnographic collections. Additionally, Better Evaluation offers resources and recommendations to help users plan and perform assessment tasks. These tasks include managing an evaluation or evaluation system; defining what is to be evaluated; framing the boundaries for an evaluation; describing activities, outcomes, impacts, and context; understanding causes of outcomes and impacts; synthesizing data from one or more evaluations; and reporting on and supporting use of findings. Better Evaluation serves as a good resource for understanding the entire process of impact evaluation.

E-Metrics, a framework for assessing outcomes in both libraries and institutions, raises questions about the organizational cultural contexts where outcomes assessment occurs. Bruce T. Fraser, Charles E. McClure, and Emily H. Leahy identify key issues that academic and research libraries face in assessing outcome. Assessments result in evidence gathering that may confirm or refute the expectation that investments in library resources "match the values and goals of the institution," which in turn may lead to service improvements.[51] Building from this hypothesis, E-Metrics calls for new assumptions regarding outcome-based assessment.[52] Important impacts may fall outside of the current goals of a repository. Language revitalization through digital returns, for instance, might not yet be a priority of a given repository but may be an important impact to document.

The UK Office for Library and Information Networking (UKOLN) framework for metrics for JISC programs, called *Evidence, Impact, Metrics*, notes the need for publicly funded organizations to provide evidence of the value of the services they provide. To address this need, *Evidence, Impact, Metrics* details a methodology for gathering quantitative evidence to demonstrate the impact and value of a variety of online services and includes suggestions on how to implement metrics-based surveys in future research endeavours.

49 Greet Peersman, "Impact Evaluation," *Better Evaluation*, accessed 18 March 2017, http://www.betterevaluation.org/themes/impact_evaluation.

50 Ibid.

51 Fraser, McClure, and Leahy, "Toward a Framework for Assessing Library and Institutional Outcomes," 519.

52 Ibid., 525.

This methodology includes a specific framework for metrics that emphasizes context, purpose, tools, interpretation, comments, and risk assessment. While suggesting an increasing appreciation of quantitative data, Brian Kelly refutes suspicion of this data by suggesting alternative analysis methods for utilizing quantitative data provided by methods such as surveys. These methods include identifying trends over time; comparing with one's peers; identifying differing patterns; providing benchmarks; and conforming to expectations or challenging orthodoxies.[53] While useful, this framework lacks the qualitative subtlety needed to document ethnographic collections impacts.

The Digital Library Federation Assessment Interest Group (DLF AIG) Analytics working group's "Best Practices for Google Analytics in Digital Libraries" provides guidelines that aim to maximize effectiveness and relevance of web data gathered through Google Analytics.[54] These guidelines enable cross-institutional resource managers to compare and share benchmarkable analytics, a method also encouraged by Kelly.[55] DLF AIG identifies 14 metrics as baseline recommendations for digital libraries to gather data, which can be sorted into three categories: content use and access counts, audience metrics, and navigational metrics. The recommendations provided by DLF AIG are an attempt to "bridge the web analytics best practices gap."[56] In addition, a current interest group of the DLF AIG is examining cultural assessment to better understand the social structures that both influence our work and result from it, to assess the cultural impact of digital collections, to increase awareness of cultural bias and institutional "blind spots," and to create more inclusive cultures within DLF member organizations. This movement within DLF shows the wider applicability of our research.

The current effort by the SAA-ACRL/RBMS Joint Task Force on the Development of Standardized Statistical Measures for Public Services in Archival Repositories and Special Collections Libraries[57] develops appropriate statistical measures and performance metrics for collecting and analyzing statistical data on public services provided by archives and special collections libraries. In addition, Wendy Duff and others are developing a model for studying the impactful contributions of archives in advancing the cause of social justice.[58] Such projects and their emphasis on outreach provide useful models here.

53 Kelly, *Evidence, Impact, Metrics*.
54 Digital Library Federation, "Best Practices for Google Analytics in Digital Libraries."
55 Kelly, *Evidence, Impact, Metrics*.
56 Digital Library Federation, "Best Practices for Google Analytics in Digital Libraries," 36.
57 Society of American Archivists, "SAA-ACRL/RBMS Joint Task Force on Public Services Metrics."
58 Duff et al., "Social Justice Impact of Archives."

Challenges of Impact Assessments for Digitized Ethnographic Collections

These resources offer foundational approaches to assessing and evaluating the creation and use of digital collections, but none looks at ethnographic collections specifically. The standards, models, and evaluation tools discussed above address broad categories of information resources that are not wholly specific to, or appropriate for, assessing the impacts of providing digital access to culturally sensitive content. As users increasingly access anthropological materials through digital means, more systematic ways to assess the outcomes and impacts of such access need to be in place in order for institutions to responsibly prioritize what to digitize and how to share their collections. While impact measures targeting digital resources such as books and scholarly journals are available, they often address only general areas of concern and are inadequate to meaningfully evaluate the value of access to digitized ethnographic holdings.

The general impact toolkits and models above do not specifically address significant questions around culturally sensitive materials. Ethical stewardship and use of these materials requires assessments that gather information about community-specific needs to control access, inadequate descriptive or contextual information, attribution (and often misattribution) of ownership, and provision of ethical access, as well as to communicate culturally appropriate (or inappropriate) uses.

Impact assessment for digitized ethnographic collections faces two main challenges. The first is the deep connection between evaluation and colonial research practices. Many Indigenous populations have been the subject of ethnographic surveys and anthropometric measurements. Evaluation research, as a corollary, has also come under critique by both Indigenous peoples and anthropologists. Linda Tuhiwai Smith's work on "decolonizing methodologies"[59] exposed the ways in which imperialist models of knowledge frame all research and Western knowledge production. To decolonize[60] research necessitates an empathetic path that assumes the primary agency of Indigenous peoples to know and describe their own knowledge and histories. This approach requires opening the research field to Indigenous scholars and entails the broader incorporation into Western institutions of Indigenous ways

59 Linda Tuhiwai Smith, *Decolonizing Methodologies: Research and Indigenous Peoples* (London: Zed Books, 1999).

60 The use of this terminology to describe methodological approaches that incorporate Indigenous perspectives is problematic and should not be appropriated without serious thought, as is persuasively argued in Eve Tuck and K. Wayne Yang, "Decolonization Is Not a Metaphor," *Decolonization: Indigeneity, Education & Society* 1, no. 1 (2012): 1–40.

of knowing, being, and categorizing the world.[61] Incorporating Indigenous knowledge into evaluation practices for Native American and Indigenous archival collections has potential "for shifting power among various community building players and partners, based on who decides how success will be defined and measured, which processes are being evaluated, who controls the dissemination of information, and especially what gets evaluated and what kinds of evidence are given credence."[62]

Critiques of the long history of objectification through research have also been voiced by settler anthropologists who are skeptical of "metrics" or "measurement"[63] and quantifiable accountability.[64] Because the practice of collecting, preserving, and exhibiting ethnographic collections is thus inextricably linked with the history of colonialism, heritage professionals and administrators responsible for these materials must also consider appropriate cultural protocols in displaying Indigenous belongings online.[65]

61 There is a growing body of literature in this area. See Norma K. Denzin, Yvonna S. Lincoln, and Linda Tuhiwai Smith, eds., *Handbook of Critical and Indigenous Methodologies* (Los Angeles: Sage Publications, 2008); Jo-ann Archibald (Q'um Q'um Xiiem), *Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit* (Vancouver: University of British Columbia Press, 2008); Smith, *Decolonizing Methodologies*; Charles Kamau Maina, "The Traditional Knowledge Protection Debate: Identifying and Listening to the Voices of Traditional Knowledge Holders" (PhD diss., University of Western Ontario, 2009); Charles Kamau Maina, "Power Relations in the Traditional Knowledge Debate: A Critical Analysis of Forums," *International Journal of Cultural Property* 18, no. 2 (2011): 143–78; Charles Kamau Maina, "Traditional Knowledge Management and Preservation: Intersections with Library and Information Science," *International Information & Library Review* 44, no. 1 (March 2012): 13–27; Shawn Wilson, *Research Is Ceremony: Indigenous Research Methods* (Halifax: Fernwood Publishing, 2008); Margaret Elizabeth Kovach, *Indigenous Methodologies: Characteristics, Conversations, and Contexts* (Toronto: University of Toronto Press, 2010); Bagele Chilisa, *Indigenous Research Methodologies* (Los Angeles: Sage, 2011); Donna M. Metens, Fiona Cam, and Bagele Chilisa, eds., *Indigenous Pathways into Social Research: Voices of a New Generation* (Walnut Creek, CA: Left Coast Press, 2013); Maggie Walter and Chris Andersen, *Indigenous Statistics: A Quantitative Research Methodology* (Walnut Creek, CA: Left Coast Press, 2013); Lori Lambert, *Research for Indigenous Survival: Indigenous Research Methodologies in the Behavioral Sciences* (Pablo, MT: Salish Kootenai College Press, 2014); and Susan Strega and Leslie Brown, eds., *Research as Resistance: Revisiting Critical, Indigenous, and Anti-Oppressive Approaches*, 2nd ed. (Toronto: Canadian Scholars' Press/Women's Press, 2015).

62 Leiderman, "Doing Evaluations Differently," 92.

63 George W. Stocking, *Race, Culture and Evolution: Essays in the History of Anthropology* (New York: Free Press, 1968): 56–57; and Pippa Skotnes, *Miscast: Negotiating the Presence of the Bushmen* (Cape Town: University of Cape Town Press, 1996): 15–25.

64 Marilyn Strathern, ed., *Audit Cultures: Anthropological Studies in Accountability, Ethics, and the Academy* (New York: Routledge, 2000).

65 Kate Hennessy, Natasha Lyons, Stephen Loring, Charles Arnold, Mervin Joe, Albert Elias, and James Pokiak, "The Inuvialuit Living History Project: Digital Return as the Forging of Relationships Between Institutions, People, and Data," *Museum Anthropology Review* 7, no. 1–2 (Spring–Fall 2013): 44–73, and Leopold, "Articulating Culturally Sensitive Knowledge Online."

The second challenge to impact assessment is that what is frequently measured, such as the number of visitors and downloads, does not offer meaningful insights for heritage professionals working with digital ethnographic collections. Community impacts, in particular, are not quantifiable by traditional measures. Constituent communities are often small, but the potential to benefit cultural or linguistic growth through knowledge sharing, particularly where cultural or linguistic traditions have been damaged by colonial processes, can be huge. Moreover, while LAMs routinely compile data on programs and services as well as collections usage and conditions, they seem to fall short in analyzing this data to drive decision-making or to initiate institutional reforms.[66] Furthermore, while data collection strategies that record numbers of visits and frequency of requests or borrowing may provide useful information, these data do not offer reliable measures of institutional impact or nuanced portraits of audience engagement.[67] The lack of clear, contextual definitions for impact and value further complicates the ability of LAMs to gauge how digitization efforts fulfill institutional goals.

We focused our study on large, national non-tribal repositories, which has limited our findings. As outlined below, our research participants are predominantly non-Indigenous professionals who are affiliated with prestigious institutions. Our study gauged the current state of thinking among those who oversee these collections, to see how they perceive the value of digitization work and to find the gaps in knowledge about digitization impacts. Most of the impacts we discuss below emerged through story-based interview responses that often illustrate collaborative projects with Indigenous community partners. Our current respective research projects take into account the practices and perspectives of tribal curators, librarians, archivists, and scholars, as well as Indigenous community perspectives, to compare, balance, and address the limitations of this article.

Six Areas of Impact

Adapting culturally appropriate approaches to impact evaluation requires identifying additional indicators of effects and changes unique to ethnographic archives. In the following discussion, we expand on our findings from a year-long study of staff at eight institutions with significant ethnographic holdings, to identify specific areas of impact that might be meaningful for ethnographic archives. We identify six areas that can be used to examine the outcomes of,

66 Davies, "What Gets Measured, Gets Managed."

67 Tefko Saracevic, "Introduction: The Framework for Digital Library Evaluation," in *Evaluation of Digital Libraries: An Insight into Useful Applications and Methods,* ed. Giannis Tsakonas and Christos Papatheodorou (Oxford: Chandos Publishing, 2009): 1–13.

access to, and use of digitized ethnographic collections. These six areas are in some ways inspired by the previously discussed models and tools.

Our analysis of interviews and interactions with LAM professionals, administrators, and scholars and our review of impact assessment literature and projects reveal that current evaluation resources do not sufficiently address the requirements and needs of digitized ethnographic Indigenous archives. Our participants overwhelmingly confirmed that one-size-fits-all approaches to understanding the value and impact of digitized ethnographic archives have been inadequate. Respondents also noted that existing tools and frameworks are unreliable when assessing digital Indigenous ethnographic collections. Often there is a mismatch between available data, such as the number of clicks and downloads, and what LAM professionals and scholars want to measure. For instance, one respondent confirmed that, if considered at all, thin metrics were the only mode of institutional impact assessment: "I'd say it's measured in the easiest and most directly quantitative way, which is the downloads" (I4). The same respondent continued: "What people do with that afterwards … I'm not aware of any assessments on that. We get anecdotal information" (I4). Another participant shared a similar contention: "I think for a community history being online and how that's used by the community, it seems to me it has to be anecdotal. I don't know how you can measure it" (B1).

Our work has confirmed that there are no appropriate models specific to designing and implementing impact studies for ethnographic archival collections. Librarians, archivists, curators, and collections managers require greater information about actual uses of digitized artifacts than what data from web usage analytics can provide. LAM professionals also lack the ability, support, and resources to assess and interpret various qualitative and quantitative data sources in a way that offers meaningful and insightful feedback. In response, we are proposing the six areas of impact discussed below. We outline high-level indicators of outcomes for each.

Data Gathering and Analysis

The six areas of meaningful impact were identified through data collected during a year-long research project involving a collaborative team of researchers from the Smithsonian Institution's Consortium for World Cultures and the University of Maryland's College of Information Studies. The study included 56 heritage professionals and administrators in eight LAMs in the US East Coast that have large ethnographic holdings. Table 1 shows the distribution of the interview respondents by institution.

Table 1: Institutional participants

No.	Institution	Total (n=56)
1	American Museum of Natural History	13
2	American Philosophical Society	5
3	Anthropology Department, National Museum of Natural History (NMNH), Smithsonian Institution	5
4	Peabody Museum of Archaeology and Ethnology	7
5	National Museum of the American Indian, Smithsonian Institution	2
6	National Anthropological Archives, NMNH, Smithsonian Institution	3
7	Smithsonian Center for Folklife and Cultural Heritage	6
8	University of Pennsylvania Museum of Archaeology and Anthropology	15

From December 2013 to March 2014, the project team conducted semi-structured interviews, focus group discussions (FGD), and site visits with all eight participating repositories. All interviews and FGDs were audio recorded, transcribed, and later coded and analyzed using the open-source data analysis software TAMS Analyzer. The interview and FGD protocols sought to understand the wide range of digital projects, programs, and initiatives at these institutions – from online exhibitions to online catalogues to repatriation projects. All interview questions were designed to encourage participants to articulate their motivations for initiating digitization efforts; their workflows and processes; the professional roles involved in digitization; their project goals; their anticipated audiences; the expected and obtained outcomes; their methods for evaluating impact; current policies around cultural sensitivity; and the institution's future goals for impact and evaluation.

To further explore the salient findings of the interviews, FGDs, and site visits, we conducted a two-day workshop in April 2014. Invited participants included LAM professionals and administrators, archival metrics specialists, members of Indigenous communities, archaeologists, ethnographers, digitization specialists, grant program administrators, and educators representing a range of experience and expertise, including the study of impact and metrics. In this phase of the study, the research team facilitated discussions and activities aimed at encouraging an open conversation to identify areas of meaningful impact and the ways to assess them. Consultations with workshop

participants helped further refine the coding categories used to highlight areas of impact. The six areas of impact we present in this article emerged by comparing the ideas generated at the workshop and the major themes of the interviews.

Coding was done by two researchers using TAMS Analyzer. To ensure consistent analysis, the two coders each began by analyzing the same three sets of transcripts and calculating Cohen's Kappa to measure inter-coder reliability. The coders achieved a score of 0.91, indicating strong agreement on coding decisions. Following this test, each coder worked independently on half of the remaining transcripts.

To cite quotations from these interviews, we use an alphanumeric coding system that correlates individuals to their expertise in order to anonymize our respondents. We determined these roles based on our understanding of our respondents' description of their job titles and work responsibilities. Each expertise is assigned an alphabetic letter and each individual a number within that expertise. For, example, B1 stands for respondent 1 of the archivists we interviewed. Table 2 shows the roles and expertise of interview respondents and their corresponding codes.

Table 2: Respondents by roles/expertise

Roles/Expertise	No. (n=56)	Alpha Code
Administrators	7	A
Archivists	10	B
Curators	7	C
Collections Managers	5	D
Curatorial Associates/Project Managers	4	E
Digital Asset Specialists/IT Staff	9	F
Librarians	4	G
Marketing Specialists	1	H
Program Directors	6	I
Repatriation Specialists/Staff	3	J

Changes That Matter: Six Areas of Impact

In "Stories of Impact: The Role of Narrative in Understanding the Value and Impact of Digital Collections," we and our colleagues showed how ethically sensitive and more culturally relevant impacts might be documented in the

form of stories.[68] We initially offered a framework for documenting, demonstrating, and assessing the impact of digitized ethnographic collections (those originating from source communities or otherwise multicultural in nature); we presented three categories of stories used by participants – metrics, singular, and abstract – and their audience and internal institutional impacts. Here, we add to these structural categories by proposing six topical areas of impact: *knowledge, professional discourse, attitudes, institutional capacity, policy,* and *relationships*. We contend that these areas, as articulated by our study's participants, will help institutions and communities articulate and assess major sorts of impact that are most relevant to institutional projects to digitize and share knowledge. We therefore do not intend to downplay the importance of traditional scholarly uses and impacts of ethnographic archives. Rather, we hope to show how much more expansive potential impacts can be. Table 3 presents the key questions and indicators associated with each area of impact. Our discussion of these six topical areas will describe both traditional and novel indicators of impact that are meaningful to repositories, users, and communities.

1. Knowledge

Perhaps the most complex area of impact refers to the use of digitized archives as educational and learning materials. We also include in this category the development of greater understanding of community histories and cultural practices, identities, and new research and scholarly projects. Impacts in this area demonstrate progress in learning or new knowledge that results from access to or use of digitized ethnographic collections. Key questions that could guide the documentation and assessment include: Where are materials being used in educational (formal or informal) settings? How is digitized content being shared or used to build knowledge about areas of interest to users? What programs are in place and how are they affecting language revitalization, K–12 curricula, cultural heritage preservation, etc.?

Previously, a traditional "knowledge" indicator for an impact assessment might be the use of collections by scholars, quantified by using citations in scholarly journals. Certainly, this can still be tracked and considered meaningful in certain contexts. In cultural anthropology, current scholars working in specific ethnographic areas consult and publish about previous archival records. Material culture scholars frequently consult archival sources while researching the histories or social lives of museum collections. In other sub-fields of anthropology, digitization can have wide-ranging uses. In archaeological contexts, for instance, we heard that digital repositories help

68 Marsh et al., "Stories of Impact."

Table 3: Six areas of impact, key questions, and indicators

Areas of Impact	Key Questions
1. Knowledge	Where are materials being used in educational (formal or informal) settings? How is digitized content being shared or used to build knowledge about areas of interest to users? What programs are in place and how are they affecting language revitalization, K–12 curricula, cultural heritage, etc.?
2. Attitudes	How are objects being used or circulated in non-community contexts? How are public or professional attitudes changing as a result of projects or access to assets? Key questions that could guide the documentation and assessment in communities include: How are assets being used? Where are objects circulating or being repurposed?
3. Professional Discourse	How are terms, language, objects, or images being used in literatures, conferences, sites, blogs, and across professional platforms? How is dissemination of assets affecting overall professional attitudes and practices?
4. Institutional Capacity	Is there institutional or resource growth around digital resources and collections? Are there increased pools of internal institutional support for projects? How is access to assets changing funding structures, guidelines, or cultures?
5. Policy	How are field-wide protocols shifting? How are policies (internal or external) shifting as a result of access to assets?
6. Relationships	Is there increased contact or interest from the public? How many times are communities returning to the institution for help or resources? Is there evidence of increasingly reciprocal relationships and increased trust?

researchers "carry out their archaeological stratigraphic contextual analysis" (B6). Such uses of ethnographic collections result in the growth and sharing of knowledge about communities and collections.

Another traditional indicator might be the increase in public or scholarly knowledge about what a repository has in its collections. Digital repositories increase access and awareness about collections, which often increases

scholarly use. Indeed, a number of our participants echoed that a major benefit of digitization projects was that their constituents, namely scholars, the public, or Native American tribes "know what we have" (F3, G1, F4, G3, D1, D4). Digitization also stretches the reach of repositories and their collections. Basic analytics allow repositories to track how far knowledge travels. As one program director said, their institution's reach had increased to "maybe 50 countries, many outside Western Europe" (I4). And, as they noted, it may be the three downloads from Ghana, rather than many thousands from the US or Canada, that most eloquently speak to an institution's ability to make materials accessible (I4). Digitization also encourages and facilitates directed and productive research visits. Having records online means that scholars "focus their efforts" while on site (D1).

Repositories, in turn, learn more about their own holdings through digitization projects. In some cases, "the process itself has led to discoveries" (G1). Posting online allows repositories to, in a sense, crowdsource knowledge about their collections. A number of our participants noted instances of users contacting them with corrections or enhancements – specific names, events, or other information about their collections that made them more meaningful (B7, G1, C4). In general, the proliferation of digital knowledge has made members of the public more intuitive information seekers, or as one curator said, "more savvy web users" (C4).

When digital archival materials make their way into K–12 or university educational settings, they can be used by younger audiences. In some cases, this form of knowledge dissemination is happening as textbooks incorporate images from archival repositories. Indicators for this area of impact can be tracked through increases in textbook permissions requests, for instance, even though "it's the textbooks themselves that we want to change" (A3). In that way, in the most aspirational sense, institutions hope to change broader portrayals of non-Western culture. In addition, more repositories are using their digital interfaces to engage in outreach with local educational institutions. As a collections manager told us, "We have so many educational institutions in [City] area, and many students using that for looking for the object for [a] term paper, for basic information" (D5). Potentially, one administrator said, their younger audiences can use digitized collections to explore "their cultural identity"(A6).

Of course, for Native and Indigenous communities, "knowing what we have" can result in deeper impact than increased research resources. The legal requirements of the *Native American Graves Protection and Repatriation Act (NAGPRA)* have required many institutions to notify Native communities about object collections, so tribal communities are often more aware of object repositories than archival ones. One program director noted that some tribes had been greatly affected by the availability of archival material online because they had been unaware that collectors had also obtained photographs

and "recorded language notes" alongside belongings (B7). Furthermore, digital access might allow Indigenous cultures outside of the United States (and therefore outside of *NAGPRA* regulations) to find out about what collections are distributed abroad and what they might consider for repatriation. As a project manager said, "It's not quite repatriation but rather helping [Nation], for instance, to understand what they should have" (E4).

Digitization projects undertaken in consultation with Indigenous communities, or projects that have encouraged more community research, also add different forms of knowledge to repositories and increase Indigenous knowledge about holdings. As one curator said, undertaking collaborative digitization projects in particular "adds so much information to the database" (C6). Furthermore, said another, "That means that other tribes are discovering things about items in our collection that we don't know" (C4).

But our interviews also showed that the "knowledge" impacts of digitizing ethnographic collections are much more than increased knowledge about what repositories have, and they reach much further than traditional scholarly outputs. Ethnographic collections have non-scholarly and community uses. The diversity of uses indicates the range of knowledge impacts possible. In settler communities, these non-traditional uses include a range of artistic and creative production aimed at the broad public. For instance, when asked who requests materials, one participant noted, "They're everything from set designers on Broadway to someone who's writing an article on Taiwan" (G1). In another case, we heard that users were in fact "filmmakers mostly making documentaries about certain parts of the world" (B7).

In Native communities, these creative uses are often for internal community production and empowerment. One administrator remarked, "So we have some very powerful testimonials from people whose music we featured … it's really changed the way people in [Nation] view and value that music, and it's made an important difference in the life of the people in this particular extended community" (A2). As another participant related, artists and craftspeople (and white experimental archaeologists, too) might recreate an object from an online collection to "figure out the mechanics of it" (F4). Regarding other creative pursuits, one collections manager said of Indigenous community friends, "I know specifically that they have accessed that database to inspire their art and their writing" (D2).

Particularly in institutions that are fostering collaborative projects with source communities, knowledge indicators have begun to include more Indigenous community impacts. Indeed, many repositories with ethnographic holdings have begun to see a shift toward more, and sometimes predominant, community users, as opposed to academics (I4). As a librarian aptly articulated:

> We really expected this to get used mostly by linguists and scholars. And we're actually finding that it's more and more used by tribes, and tribal elders, who are scholars in their own right, but not scholars in the traditional sense. And it's really more of a cultural preservation tool for them, rather than the basis of studying and publishing or what have you. So I guess initially I would've said, "Well, how many people are actually citing this material or using this material in their dissertations or in their work?" And I would say that it'd be pretty small. At this point, I'd actually be more interested now to say, how much is this getting propagated within tribes and within those cultures where the tribes exist? Are they using this as part of language instruction? Are they using it as part of local history courses? (G4)

For Indigenous communities, impacts can be rapid and enormous as barriers to access are removed. Knowledge indicators thus include uses of collections that broaden community knowledge of family and tribal histories. In many cases, Native community members recognize their family members in archival holdings. Digital assets can be part of bringing "ancestry … back to their community" (E1). Such uses of collections contribute to community knowledge of families and cultural heritage. Other uses resulted in the sharing of knowledge with the wider Indigenous community. In one case, we heard from a collections manager whose digitized video was requested for a community screening: "They're going to have a celebration in May, and … they're going to show the film footage that we created" (D2).

In some cases, repositories have built relationships with community-based educational programs or K–12 schools. Repositories have seen collections become "embedded within the [State] education standards" (I4). Others have begun to "build curricula" and even "develop a Native American faculty," drawing on digital assets (G3). Thus, increasing knowledge broadens from "scholarly work" to the "preservation of culture" (G3).

The capacity to use digital assets "to revitalize the language that was lost to speech for a time" (I4) was frequently identified as one of the most important indicators of impact. In a few cases, repositories are directly feeding digital materials into language immersion schools: "Our materials [are] being used in [tribal language] for kindergarteners" (I2). The interconnected and multimedia nature of digital environments can enhance the potential for use in language learning. The nature, depth, and interconnectivity of knowledge that can be conveyed to faraway source communities in digital interfaces also broadens potential knowledge impacts to include those not "having the airfare to fly [to the institution]" (C2).

There are, of course, negative knowledge impact indicators to consider. Negative knowledge impacts might include the improper dissemination of knowledge that should only be shared in certain cultural contexts. Negative impacts can occur as protected or sensitive cultural information or depictions are shared online. They can also occur as non-community members encounter them. As one participant noted: "Every incarnation of every derogatory word

you can imagine … we leave that on the record. We don't change anything – we add a new title. For historical and research purposes, this is important colonial and contextual history needed to interpret collections. In the public realm, however, this information can be misused or interpreted as current, truthful information. Outdated and even racist 'knowledge' can be circulated in this way" (G1). As a digital assets specialist told us, unfortunately certain materials "get used in racial contexts a lot. Recently, an artist was using them for her slant and her artwork" (F4).

There are also important barriers to knowledge dissemination for institutions to consider. Most notably, many Indigenous community members may not have the infrastructures and connectivity to access materials placed online. As one curator told us of a community they work in, "It's a relatively poor agrarian community, so they wouldn't have computers that they could use to access anything about the site" (C7).

2. Attitudes

Attitudinal impacts consider how the use of digitized archives might lead to shifts in attitudes – emotions, positions, and feelings – toward objects, institutions, or communities. Key questions to document and assess non-community impacts include: How are objects being used or circulating in non-community contexts? How are public or professional attitudes changing as a result of projects or access to assets? Key questions for assessment within communities include: How are assets being used? Where are objects circulating or being repurposed?

A number of our participants noted that changing the public's perceptions about Indigenous people is very important. They consider it to be making a "deep change" (A3) in society. Repository professionals are aspirational regarding the ability of digital access to their materials to "open up a whole new way of thinking" (G1). As an administrator remarked, their institution's goal was to shift media representations and public attitudes (A3). Members of the public might also change their perception of institutions because of digital access. As one librarian noted, shifts in attitude might happen on a broader scale as an institution attempts to remake its public image, "trying to position the library as a place of interest for the public... Not necessarily in a scholarly way, but as a fun, interesting place" (G1).

Attitudinal change can also occur at the institutional level. Repositories that were once insular have begun to change their attitudes about the importance of digitally sharing collections with Indigenous communities. As one program director said, "Tribes were incredibly knowledgeable about how to use digital technology. That was the other big shock – whatever stereotype we had about 'Oh, they don't really know how to work this' was completely untrue" (I2). Institutions have also acknowledged the complexity

of each cultural context and community constituent. Even the community, one administrator articulated, "is not one monolithic group. There are actually subgroups, and some have responded very positively and some not so positively … and generations tend to vary, too" (A4). Such attitudinal shifts feed new, more culturally responsive, professional discourse.

One of the indicators of attitudinal impact is that (long-skeptical) tribal communities are beginning to trust, or at least willingly work with, colonial institutions. As one repatriation officer said, digital projects "enhance the trust level of the tribes … they know that the collections are not out of reach, even if they're … in Hawaii or as far away as Alaska" (J2). As they noted, building trust is a major priority, and "rapid response to their inquiries related to the collections or related to repatriation builds trust with them" (J2). It is a major attitudinal shift that "the tribes recognize that this offers a level of security to archive their cultural objects, whether it be in the control of the museum or in the control of the tribe or jointly. It gives them something else to reference if they face loss" (J2). Similarly, a librarian described the shift in feelings in Indigenous communities about his or her institution thanks to its digitization program: "The word spreads, and the word has spread in the Native American world that the [institution] is doing that" (G3). This shift in feelings on the part of one tribe in turn generates more interest in collaborative projects from other tribes.

On the other hand, it is important to know what negative impacts are generated because of negative attitudes or behaviours. Potential racist uses of collections discussed above are also indicators of negative attitudinal impact. As one curator noted, "What I'd like to know is whether people are using the images in a derogatory kind of way, or in a way that belittles the people who made them" (C2).

3. Professional discourse

The third area of impact refers to the use of digitized archives in modifying our broader literature, professional cultures, and best practices. Key questions that could guide the documentation and assessment include: How are terms, language, objects, or images being used in literatures, conferences, sites, blogs, and across professional platforms? How is dissemination of assets affecting overall professional attitudes and practices?

Digital access to materials and their increased use necessitates new professional practices that are not always deliberate or anticipated. An administrator remarked that through digital access to collections, "the basic business of this museum has been transformed" (A3). Increases in requests for materials owing to digital access, for instance, required new practices. As another administrator related, increased requests forced the institution to release its metadata, "and so, that actually had an impact on changing our own culture"

(A5). Increased access necessitated further access. The impacts can thus also be circular. Similarly, in other cases, digital projects generate more community interest and research visits, and community research visits in turn generate more digitization projects. One archivist said, "When we have tribal visits, quite often that will initiate a large digitization project" (B5).

Moreover, the very act of beginning a digitization program, or piloting a policy for doing so, may bring about increased institutional and administrative awareness about the range of issues involved. This, in turn, may shift institutional culture toward more culturally sensitive attitudes, policies, and practices. Some of our participants were quite articulate about this institutional culture shift. For instance, regarding human remains information or images going online, one repatriation officer noted, "It generated another conversation about the appropriateness of certain remains being on display" (J1). At another institution, a librarian remarked:

> It also quickly came to the fore that there are some cultural sensitivity issues here that [the institution] has never given much thought to. It has always traditionally been focused on the scholarly. And I didn't see any reason why we couldn't write some protocols that would give Native Americans the opportunity to say, and they often do say, "We're really grateful for you being the stewards of our materials. Some of this material we consider to be proprietary, and we really don't want it to be put on the Internet. We really don't want public access at all (G3).

At that institution, digitization generated new professional discourse about what materials to restrict.

Institutions are shifting their practices and assumptions about practices, becoming more open-minded. One digital asset specialist, learning of a particular cultural protocol, noted, "But we didn't know that. So this was new to us. So this kind of makes this whole thing keep expanding and expanding" (F4). Further knowledge about the particularities of community protocols shifts practices from assuming to asking questions. One repatriation officer said, "It's been a surprise for us because it seems like the tribes are often proposing things that we didn't think that they would have been interested in or would have been accepting of. And so, we've kind of stopped assuming" (J2).

In other cases, as one curator noted, "you can't just assume that everyone loves their cultural patrimony just splashed all over the web.… So it has to be done in consultation with the communities" (C2). Likewise, institutions have stopped assuming that they know what is culturally sensitive, and instead have begun consulting each constituent community about their holdings.

Attitudes also change within institutions as projects play out. Where initially institutions see risk, they begin to see opportunities (or that risks do not materialize as anticipated). Regarding putting collections online, a repatriation officer and digital assets specialist reflected on their earlier efforts:

J1: I think that there was a lot of caution at the beginning, and as things have progressed and as other institutions have done it, then I think there's a greater comfort level with going ahead and doing it. I think that there isn't a lot of time to really think these things through at the higher level, and so if there's any risk associated with it, then it tends to get just shut down.

F2: I think that was the initial reason they shut it down because putting stuff online just seemed, and giving it away in a way was …

J1: Yeah, at that time seemed maybe a little too radical, but now that it's become the norm, I think...

As another program director pointed out, such realizations have "changed our whole philosophy ... it was the first time we ever thought of Native Americans as constituents of the library. We knew we had a lot of their stuff, but we had never thought of them as an audience" (I2).

Word spreads about shifting cultural attitudes, and such cases generate further impacts at other institutions and across the wider professional field. As an administrator noted, there were beginning to be other "people who start to think of us as the models they want to emulate" (A5). As more institutions take on digitization projects, other institutions learn from their successes and pitfalls, including those related to cultural protocols and preservation formats. As one program director said of coming to digitization late in the game, "It does mean that we have the luxury of learning from other people's mistakes about what format, etc., the size of images, that sort of stuff, so I think that's useful in various ways" (I6). The success of various projects has generated professional interest across the archival field in particularly collaborative digitization projects. Throughout the profession, there is much more interest in "sustained engagement with particular communities" (I6). However, as participant A2 pointed out, "Indicators of trust, indicators of engagement, and indicators of influence ... our work in this area is still nascent."

4. Institutional capacity

Institutional capacity refers to how digitized archives are affecting institutional, granting agency, or community resources. This includes institutional and community ability to carry out projects, promote discourse, and share knowledge. Key questions to ask when documenting and assessing institutional capacity impacts include: Is there institutional or resource growth around digital resources and collections? Are there increased pools of internal institutional support for projects? How is access to assets changing funding structures, guidelines, or cultures?

A main indicator of institutional capacity is the facilitation of access to collections. This includes access that takes place exclusively online, as well as digital access that facilitates in-person visits. One collections manager noted

that a good measure of impact was "how easily I can facilitate people having access to the collection" (D4). Institutions can track how many individual requests for collections information they receive and effectively respond to, a process that is often improved by digitization programs. Digitization has an impact on traditional scholarly requests and research visits, but it especially affects non-traditional users. One repatriation specialist noted that "making those [records] more easily available makes consultation easier for them, for us, reduces the expense, and makes it easier for them to circulate to people that need to see [them]" (J2).

On the whole, digitization allows for "the automation of the business processes" (A3). Another administrator said of this improved process that "the research requests are more informed. It saves us time. It's affecting us" (A5). This administrator noted that digitization had not just affected collections information and digital knowledge infrastructures, but was also fundamentally "changing the way we do the acquisition process (A3). Indeed, some participants in our study noted that digitization had had more impact internally on repository and staff workflow than on audiences. According to one collections manager, digitization had meant a "change [to] our staff's work style, how to hold records, how we change our records, how [to] make the quality records online, [the] workload" (D5). There are direct benefits to institutions when research is made easier by digitization: "People began to realize we were actually saving a lot of staff time even if we didn't know it," one participant explained. "And so my philosophy has been that the better you are online, the more the benefit you as staff" (A6).

Another way to show shifts in institutional capacity is through digital infrastructure. For example, one librarian said, "I think we had maybe 15 or 20 browse-able subject terms and now we have, like, 350" (G1). In the words of another program director, "So, as we digitize materials and link them to our records … that creates a … way to measure how we've enhanced access and information about a collection" (I5). Changing infrastructures can influence the breadth of types of users who access collections, particularly beyond scholarly users. In discussing the move to an integrated online database, a collections manager said, "The data that we put online in our own [Institutional sector] website has been copied onto the [wider Institution] collection search, which definitely has a much wider audience, a much more sort of general audience than just a scholarly [one]" (D1). At an even broader level, such successes might forge wider institutional partnerships, including through the creation of "a consortium of other repositories" (G3). Or as another repatriation specialist said, "It facilitates those kinds of collections divided around the world" (J3).

In a few cases, our participants had reached out to Indigenous communities, which in turn fundamentally changed the way they structured information in their database. Both public and tribal users requested more information

about the provenance of collections, which "changed our ideas about building that information within our own internal database in order to push it out" (C4). Ideally, community users in turn have more capacity in their own tribal institutions. One administrator remarked that building capacity at the community level might mean "enabling Native Americans to have better access to cultural resources and to express their own selves and their own peers" (A3). On the other hand, promoting institutional capacity at the community level is often a very daunting endeavour. Many communities do not have the infrastructure or funding to support independent programs: "It's unbelievably sobering to go out there and realize how poor the Internet connections are … you get a very distorted view" (I2).

Increased funding opportunities and support from granting agencies have often been one way to track growth of institutional capacity. Receiving grant funding and second-round grant funding that supports deeper, more robust, or more accessible infrastructures can thus become an important indicator. In the experience of an interviewee, success breeds further success: "We applied for a second round of [grant] funding based on our first round of success" (A1). One program director put it simply: "The reason our ethnology collections are digitally imaged in the way that they are is because of the [grant fund], period" (I1). When they are successful in securing funding, institutions learn through experience to develop larger-scale projects and to finding grant support for them. One interviewee described an experience:

> It just so happens the maximum amount of money that the [granting agency] will reward you for an access program is enough money to hire three photographers for two years, and we have found that we've been able to do a continental collection every two or three years roughly … we proceeded to write grants to the [agency] on a continent-by-continent basis, and we basically got grants from them for every continent. (I1)

Much traditional assessment of impact has taken place at the request of funders, and grants are a fundamental driver of impact thinking. As one program director related, community members "send these incredible letters. We say, 'Tell us more. We'd like to be able to tell the sponsor.' And they write these incredibly impassioned letters about weeping when they hear their language spoken for the first time" (I4). Another such program director, speaking about follow-up for the purposes of a grant, said, "Foundations should want to know how transformative their gift is, or at least some sense. The thing that's important for us is we can ask [agency] for follow-up funding. So we need to show as much as possible how transformative it is, so that they will feel good about what they're doing" (I6).

It is also important to consider that funders have considerable influence on the ability of institutions to sustain large digital projects, such that increased capacity may be short-lived. In this way, institutions might have false or

temporary indicators of increased capacity. Often when the money runs out, institutions have no capacity to continue projects or to follow up with them: "A lot of people are just putting these things out and then you just never know what will happen. I don't know how much people then do follow-up. I don't think they do, because the funding runs out" (I6).

Another important consideration is that the current grant-driven culture of assessment may lead to biased data if institutions avoid reporting negative impacts or exaggerate positive ones. Communities doing assessments are also likely to sugarcoat the impacts of their work. One program director feels that "these 'studies' … [are] by the people who are trying to get more money to do more of what they're doing or do it better. And this is hardly an independent assessment" (I4).

Funding cuts might also indicate negative impacts, as institutions or granting agencies perceive an overabundance of digital resources (and their lack of use). On the other hand, some institutions are experiencing so much success that interest and requests are exceeding institutional capacity: "We're ahead of where anybody can even think about how to accommodate it. So we're really struggling to find funds to support this" (J2).

5. Policy

This area of impact focuses on how digitized archives are affecting governmental or institutional formal rules, regulations, or laws regarding digital community assets. How are field-wide protocols shifting? How are policies (internal or external) shifting as a result of access to assets?

Especially at the governmental level, participants at our workshop identified this area of impact although it was not a major one identified in our interviews. However, while fewer of our interviewees had examples of government-level policy change, we heard many instances of field-wide protocols being affected. New technologies themselves are generating the need for emergent protocols. In the best cases, these changes result in new formal institutional policies and memoranda of understanding (MOU) with tribal nations. Such professional shifts have to take place across a range of expertise in an institution – users, Native American communities, archivists, and technologists. Moreover, these institutional policies are being shared with other institutions and producing field-wide change. Institutions that have introduced protocols begin to be models "as the profession figures out what best practice and standard is" (G3).

On the other hand, it was clear that many institutions we spoke with in 2013 and 2014 had not yet formalized any policy: for example, one interviewee explained that "there is no overall policy either division-wise or museum-wise. There are museum initiatives" (C1). In one institution, we heard from an administrator regarding an integrated policy around digitization: "We

really wish there were.… But there isn't. All the different departments that are working on digitization, which are several, we're all working separately. Unofficially, we all communicate with each other but we're doing different things. We have different budget constraints and different staffing levels" (A1). A lack of policy or movement toward one in particular might certainly indicate a null impact in this area. Some institutions are simply slow to adapt policy to reflect trends in developing culturally sensitive protocols such as permitting the take-down of items upon request by a community member. One participant, for example, candidly remarked, "I certainly have no memory of taking anything offline because of a request from an Indigenous community" (I1).

6. Relationships

This area of impact refers to how digitized archives are affecting relationships between institutions and communities or the broad public. Key questions to ask when documenting and assessing relationship impacts include: Is there increased contact or interest from the public? How many times are communities returning to the institution for help or resources? Is there evidence of increasingly reciprocal relationships and increased trust?

As noted above, there is a long-standing distrust of colonial repositories among many Indigenous communities. Several institutions have noted that increased numbers of requests from originating communities are an indicator of an improved relationship, as are increased "anecdotal requests and stories and opinions and interests" (G1). Interviewees have noted that access made possible by digital technologies is smoothing the request process with originating communities and that "it's definitely had a positive effect on the relations" (B5). But digitization projects often forge mutually beneficial and relationships that outlast the initial project, "so these kinds of programs begin to drive collaborations" (I5). Genuine relationships can be built from simple reference requests: "We have lots of relationships with Indigenous groups just from regular reference and from ad hoc permission requests that morph into this bigger relationship, and it just evolves that way" (F3).

Through such collaborations, institutions have begun to change information in their databases to better reflect new knowledge generated through partnerships and increased user access. As an administrator remarked, when the institutional priority is "giving primary access to Native people, and when we give access to Native people, we learn about the collections through first-hand conversations and we gain more context and insight" (A3). The same community that showed a digitized film on a big screen also subsequently arranged for "a bus this summer and [to] have the community come up for a whole day and spend [it] here" (D2). Through this kind of reciprocity, knowledge is shared by, and benefits, both parties.

Digital technology allows access to extend beyond the visit, and thus helps to sustain relationships after in-person visits with communities. One collections manager remarked, "They'll come here and look at a thing, but then when they go home, they want to see it and talk to their neighbour or their friend or their teachers or whatever about it" (D1). Furthermore, digitization projects generate relationships among institutions. As a collections manager said of joining a consortium-based online interface, the idea was to pool collections and increase access and also to "generate a lot of information that would be fed back to the museums … so there'd be this back and forth of information" (D1). On the other hand, the misuse or inappropriate circulation of an object might harm or destroy the relationship between an institution and a community.

The goal of mutually beneficial relationships also has its challenges. Those who facilitate distributed digital interfaces often face challenges soliciting active participation, as confirmed by one collections manager, who noted, "It's been a few years and we haven't gotten a lot of information back … that hasn't really happened" (D1).

Issues for Further Consideration

One of the aspects of impact not explicitly explored here was the time frame of impacts. It is clear that for many of these projects impacts occurred over an extended period. One participant recommended that "if you want to have good stories why you should digitize, you could make a list. But in that list, you should know that these lists cannot be measured in a five-year time period" (B1). One of the challenges in documenting impact for digital projects through time is that systems change so rapidly. One collections manager opined, "We also don't have a lot of good data in regards to class use and research requests before the new database and getting the collections online. So it is hard to compare our current data to past data" (D4). Furthermore, once institutional change has taken place, actors in the institution often take for granted the new status quo, and so they have trouble identifying shifts that have taken place. We found this to be the case at institutions that had begun digitization programs very early. This phenomenon makes an even stronger case for documentation.

Another difficulty in tracking impacts around digital materials over time is that user expectations are also changing. More exposure to online resources may inspire greater access demands. LAMs often cannot keep up with expectations of access and actual user demand. As a curator averred, "One thing I can tell you is that there seems to be an expectation within members of the public and almost every kind of user of online information ... that somehow they expect that museums magically put every single thing up online" (C4). Similarly, a collections manager commented, "We also get requests from the

public who are like, 'Well, how come I can't see this and that online?' 'Well, because we have two million things and we don't have pictures of all of them yet, so just wait. We'll get to it eventually.' If you digitize this thing, your next public information request is going to be for this other thing. You're just never going to get everything covered" (D1). One of the program directors shared another experience: "So I had a researcher who was here looking at some online material, and she was very happy that there was stuff online that she could then look at in terms of the stuff available, but then there were some things that weren't photographed, and she was like, "Oh, and I wasn't sure it was going to be easy to look at" (I6). Some institutions are choosing to vet all of their online material for cultural sensitivity concerns, while others are not. Either way, because of many of the ethical concerns discussed above, even fully digitized collections may not, and should not, be accessible online for all users. Academic researcher expectations regarding universal access will have to change if cultural concerns are to be taken seriously.

We have increasingly heard, particularly from Indigenous community members, that health and well-being are potentially measurable impacts of these projects. We think that expanding the "knowledge" category might open up the possibility of community health as an important impact. Certainly, where digital surrogates are being used in language revitalization, there is evidence to suggest that community pride, well-being, and health are key impacts. At a February 2017 symposium on endangered languages and globalization, held at the University of Pennsylvania, Elder Tom Belt of the Cherokee Nation noted that language carries wisdom, not merely knowledge, such that it can have an impact on holistic well-being.[69] He shared an example concerning Indigenous knowledge of plants and their properties; as the world loses languages, it loses wisdom about plants and healing. Digital access to archival documents and recordings promotes a restoration of that wisdom. Likewise, at a 2016 symposium hosted by the American Philosophical Society, Kayla Begay (Hoopa) noted that revitalizing languages, aided by increased access to repositories and collections, promotes mental and physical health, and can have a major impact on overall community health and well-being.[70]

There are also barriers to both generating impacts and documenting them. As one participant said quite simply, "Putting stuff out online is not a good in and of itself" (C5). Some institutional interfaces have not made images more

69 Tom Belt presented at the symposium Languages Affecting Globalization: How Words Can Change the World, which was held at the Penn Language Center, University of Pennsylvania, 10 February 2017.

70 Justin D. Spence, Kayla Begay, and Cheryl Tuttle, "Teaching Wailaki: Archives, Interpretation, and Collaboration" (paper presented at Translating across Time and Space: Endangered Languages, Cultural Revitalization, and the Work of History Conference, American Philosophical Society, Philadelphia, October 2016).

accessible, because they are poorly designed: "I would imagine quite frankly we probably don't have much of an impact at all. I mean, it's hard to find these images. I mean, unless you know what you're looking for" (C5). In other cases, our participants worried that they had no institutional capacity for assessment: "We don't have the time to think about 'Oh well, this gives us some interesting data and how might we use it.' We just don't have the time to really consider those things" (B9).

Some positive indicators (such as user attitudes, which are often major goals of institutional staff) are difficult to track. Indicators identified by institutions undertaking digitization projects include such sweeping changes as "increase(d) understanding of the Pacific peoples" (C2) and an actual grasp of the relevance of Indigenous issues, not just academic understanding. The ambitious aspirations staff have for digitization make some impacts of these projects seem small by comparison; for example, one curator asked of a digitization initiative, "Did it make you realize something about the deep history of Indigenous peoples in the hemisphere?" (C4). Similarly, as another interviewee reflected, "What does that mean in terms of, say, global warming from a science perspective, or what does that mean for Native people and the issues they face today in environmental change, and what does it mean about racism and our own understanding of the world?" (A3). It is possible that these kinds of sweeping impacts may only be possible over a longer time period or through physical interaction. Such attitudinal changes might not be easy to track, even if institutions are documenting uses or the circulation of their collections. At the community level, many tribes face far greater challenges than can be tackled by museums or digital technologies.

In the end, the only real way to glean evidence of nuanced, sustained impacts will be to track what is happening at the community level: "You can do the metrics, but to go through the communities and engage with them long enough to see actually how it's [collections are] being used. So ideally, it would be the community who actually uses it in schools" (I6).

Ultimately, a major limitation of this study is that these responses came from institutional perspectives. The perspectives of academics and Indigenous community users are notably missing. New projects that aim to fill this gap are currently ongoing. The first is Diana Marsh's work at the American Philosophical Society. Marsh is interviewing Native and Indigenous community members and institutional partners who have received digitized collections in order to understand the meaning and use of archival materials "back home" in the community, and to establish best practices for cultivating community relationships in digitization endeavours. The second is Ricardo Punzalan's research partnership with the National Anthropological Archives, which focuses on both Indigenous and non-Indigenous users of the digitized archives of anthropologist John Peabody Harrington (1884–1961). The Harrington archives is a major ethnographic collection that covers Native languages and

cultures of many tribes, with particular emphases throughout the Pacific coast region. The collection includes a variety of formats that have been digitized and made available to identifiable source communities, mostly along the West Coast. By going directly to user communities, we aim to develop a more holistic characterization of impact that goes beyond institutional perspectives.

Conclusion: Identifying Indicators of Impact

The identification of the six areas of impact discussed above is a first step toward meaningful impact evaluation for culturally specific digital collections. Impact assessments can be effective if they help determine whether program and project outcomes indeed reflect the values and aspirations of institutions. They also help to meaningfully document the work that institutions and practitioners are undertaking, especially in an era of much more involved, collaborative projects.

Institutions put materials online to draw researchers and communities to their collections. However, digital projects do not always result in positive outcomes. Hence, we encourage cultural heritage professionals and administrators to reflect on the six areas of impact, mindful of their obligation to mitigate, if not completely eliminate, any negative outcomes or unintended consequences of digital access that harm communities and violate their cultural privacy.

Table 4 presents sample scenarios that help indicate outcomes and effects associated with each area of impact. Our study elaborates tangible contributions and changes to *knowledge, professional discourse, attitudes, institutional capacity, policy,* and *relationships* that are important drivers of institutional values. A necessary next step is to develop ways to capture and evaluate how institutions are achieving progress in each area, particularly the significant changes and effects enabled by digital access and use.

Knowledge, perhaps traditionally indicated by increased scholarly citation, can be evaluated in terms of learning outcomes in both formal and informal settings. This involves not only K–12 teachers and students in typical suburban classrooms or elite university settings, but also in tribal schools, colleges, and universities. In other words, what new knowledge is being created because of the availability of ethnographic materials online, in the broadest sense? *Professional discourse* is a pertinent area of examination that reflects core values and beliefs in the LAM community. What, we ask, are the notable changes in the ways the LAM community describes and discusses its responsibilities to Indigenous communities? A broader area to consider is the general shift in *attitudes* toward Native Americans, their history, and their community, including contemporary issues facing them. How can we demonstrate the ways in which the access to and use of digitized ethnographic content leads to fostering equity and social justice? How are

Table 4: Areas of impact and potential indicators

Areas of Impact	Sample Indicators
1. Knowledge	Students showing proficiency in speaking and writing using an endangered language. Schoolteachers increasingly relying on digitized resources in classroom teaching.
2. Attitudes	Individuals demonstrating respect and understanding of cultures unfamiliar to them. Members of the public becoming aware of Indigenous rights.
3. Professional Discourse	Archivists and other heritage professionals increasingly adopting culturally appropriate terminologies in their descriptive practices. A professional association revising its code of conduct in light of cultural sensitivity concerns.
4. Institutional Capacity	An archives receiving greater funding support as a direct result of providing online content. A museum being able to create new public programs.
5. Policy	A governmental or professional organization shifting its policy as a result of digitization. Specific copyright and privacy rules being adopted in relation to Native American materials online.
6. Relationships	Communities increasingly reaching out or initiating projects with the institution. Inter-tribal collaborative efforts centering around mutually shared heritage objects.

LAM professionals or society as a whole improving advocacy efforts for the rights of Indigenous peoples?

Institutional capacity goes beyond improved resource allocation and includes the ability to transform institutions. One of the findings of our study is that digital projects require a lot of external support, and such support could inspire shifts in priorities. Showing the significant changes in resource allocation and institutional priorities resulting from ethnographic digitization

is important for LAM sustainability. Moving further, we ask whether use of digitized ethnographic archives has shaped laws and *policies*. Has there been progress in terms of establishing protocols between Indigenous communities and LAMs? We are also particularly interested to see further examination in the area of intellectual property rights and Indigenous rights.

Perhaps the most important area of impact that we all desire to see is in the realm of *relationships*. As LAM scholars, we are aware of the long history of extraction and the lack of consultation and dialogue between repositories and Native communities. Despite broader movements in collaboration, very few LAMs have existing relationships with communities whose cultures and histories are represented in their collections. The digital turn can become a vehicle for establishing connections and collaborations with source communities. This should not be too difficult to achieve given that the LAM professionals and administrators we interviewed see relationships as a meaningful area of impact. How can we document the increased mutual reciprocity that ethical collaborations are generating? How can we best capture the changes that result from such relationship creation?

Identifying the six areas is a significant beginning, and we have begun to suggest specific indicators here. However, we can only reach new methods for documenting impact by establishing specific indicators for each area and defining appropriate methods for evaluating and documenting them. As our literature review highlighted, there are available toolkits and methods that we can consult and build from. As we have heard from Indigenous scholars and community members, this will also entail further consultation and research at the community level.

Appropriate models for assessing the impacts of digitizing ethnographic collections do not yet exist, despite the desire to understand what happens to digital surrogates when they go online or circulate among users, particularly in tribal contexts. Increasingly, community users and uses of anthropological records are broadening the potential impacts of these collections as they circulate in Indigenous contexts. The six areas of impact we have identified will help institutions and communities articulate and assess the major sorts of impact that are most relevant to digitization and knowledge sharing. These areas expand impact thinking beyond traditional scholarly publication or website metrics. These six topical areas of impact thus help institutions and communities articulate and assess the changes that matter.

The six areas of impact can be a useful starting point to help bring institutions and communities together to articulate common notions of meaningful outcomes. We suggest that this should occur *prior* to publishing any archival items online. Digital projects must begin with and result in good community relationships. It is our desire to help institutions develop more nuanced understandings of their online users, the multiple uses of their collections, and the meaningful effects that digitized ethnographic archives are making in their

users' lives. We hope that the areas of impact and their indicators prove how potential impacts can be much more expansive than metrics or analytics. In the current political climate, as major funding sources for digitization and LAMs come under threat, effectively documenting the meaningful impacts and outcomes has never been so crucial.

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