June 18, 2014

Sustaining the Digital Humanities

Host Institution Support beyond the Start-Up Phase

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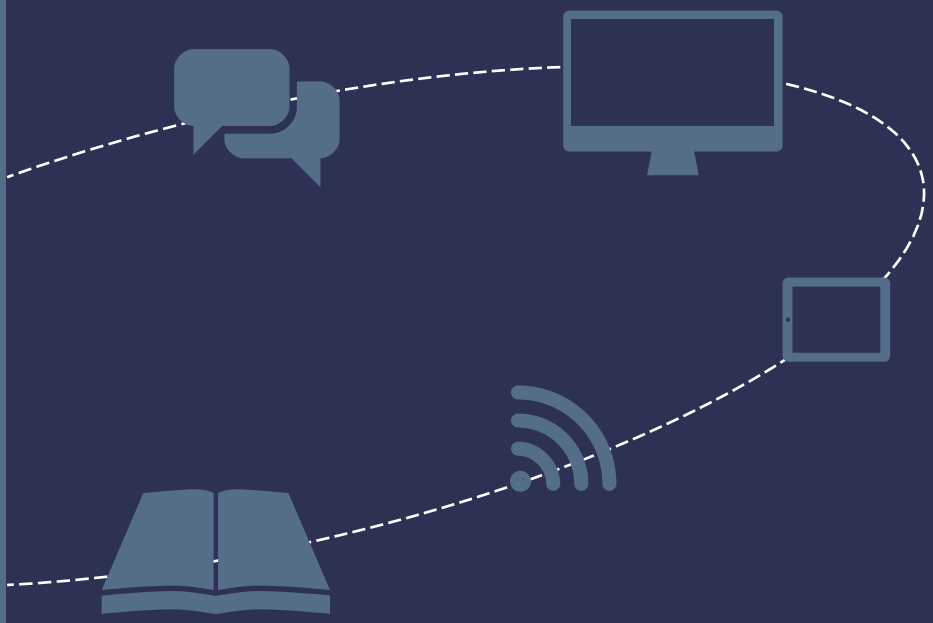

Ithaka S+R is a strategic consulting and research service provided by ITHAKA, a not-for-profit organization dedicated to helping the academic community use digital technologies to preserve the scholarly record and to advance research and teaching in sustainable ways. Ithaka S+R focuses on the transformation of scholarship and teaching in an online environment, with the goal of identifying the critical issues facing our community and acting as a catalyst for change. JSTOR, a research and learning platform, and Portico, a digital preservation service, are also part of ITHAKA.

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Sustaining the Digital Humanities has been made possible in part by a major grant from the National Endowment for the Humanities: Exploring the human endeavor. Any views, findings, conclusions, or recommendations expressed in this report do not necessarily represent those of the National Endowment for the Humanities.

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Preface

Digital projects are flourishing in academia. Digital tools and platforms have emerged that make it possible for faculty and students—and not only those well versed in computer programming or database construction—to undertake substantial digital projects using original or digitized content in formats intended to be shared, sometimes just with those in their discipline and sometimes with a much larger audience. Even beyond the creation of content collections, scholars are developing their own software and tools to perform textual or spatial analyses of these digital corpora, platforms to encourage user-generated content, and communities that engage deeply and directly with these resources.

If today there are fewer external grants available for major digitization projects,[1] this does not seem to signal an ebbing of interest among faculty and staff in building things digital. Many libraries and museums have begun to take on some of this creation on their own, finding funding in their own budgets or from their host institutions to help support this work. Digital humanities centers continue to spring up on campuses across the country and beyond. As of February 2014, the Alliance of Digital Humanities Organizations had 175 registered institutions (up from 114 in 2011),[2] and many other campuses are wondering if they should have one, too. The manifestation of several regional and online communities of faculty and students interested in DH, and the growth of THAT (The Humanities and Technology) Camps—58 hosted in 2013, up from 26 in 2011—signals a real hunger for more information and growing interest in participating in this "maker" culture, whether through learning how to apply technical methods to one's research or, in many cases, learning to code and starting to build things. While the creation of new digital resources of all types continues on campuses across the country, how will these outputs be supported?

This study assesses the role that higher education institutions are playing as faculty and staff continue to create digital resources. We are not concerned here with online articles or journals, which have established paths to distribution and preservation (despite the significant changes to the business models that support them). Nor are we primarily concerned with institutional repositories, which

1 While in recent years, digitization may have been displaced by initiatives focusing on innovation or discovery, some major funders do still support digitization. See, for example, the National Endowment for the Humanities' Division of Preservation and Access (http://www.neh.gov/divisions/preservation) and the National Historical Publications and Records Commission's Digital Dissemination of Archival Collections program (http://www.archives.gov/nhprc/announcement/digital.html). In addition, in April 2014, the Council on Library and Information Resources (CLIR) announced that it will be reconsidering digitization of rare and unique collections. See http://connect.clir.org/blogs/christa-williford/2014/04/22/un-hidden-collections.

2 Other examples of this growth: the digital humanities showcase website *Digital Humanities Now* has 12,900 Twitter followers (up from 2,800 in 2011), and the open-access, peer-reviewed journal *Digital Humanities Quarterly* has 3,305 followers (up from 688 in 2011).

arguably deserve a study all their own. Rather, we are curious here about the "everything else"—the digital collections, portals, encyclopedias, mapping tools, crowdsourced transcription projects, visualization tools and other original works of research, collections of scholarly materials, and innovative projects that may be created by professors, library, or IT staff—projects that as "one-offs" can too easily fall by the wayside of existing routes to publication and preservation.

We hope that this report will help faculty, campus administrators, and library directors to engage in productive conversations about the value that this work delivers, about the direct and institutional costs it requires to undertake and to support it for the long term, and about the most effective ways to marshal that support across the span of the institution. Ideally, the findings of this study and the tools included in the appendices will also help digital humanities project leaders to better understand what drives the choices of campus decision-makers. They may also aid university administrators and decision-makers in assessing the value of digital humanities projects and in creating systems that can support faculty and their digital projects in ways that bolster the mission and aims of the institution.

Executive Summary

As more and more scholars experiment with digital methods and with building digital collections, what measures are in place to make sure that the fruits of these labors are kept vital for the long term? Library directors and chief information officers sense that there is interest on the part of faculty, but does this mean they need to invest in a digital humanities center and hire new staff or just reconfigure the people and resources they already have? First and foremost, what does university leadership seek to gain from such an investment?

While *digital humanities* (DH) continues to be a catch phrase that can include everything from teaching methods to building tools for data analysis, this study, funded by a Digital Implementation Grant from the National Endowment for the Humanities' Office of Digital Humanities, addresses a certain type of activity: the creation of digital research projects. We do not focus on online articles or journals, for which there are established paths to distribution and preservation (despite the significant changes to the business models that support them), or on the great volume of student-generated work. Nor are we primarily concerned with institutional repositories, which arguably merit a study all their own. Instead, this study seeks to address the fate of digital research resources—whether they be digital collections of scholarly or other materials, portals, encyclopedias, mapping tools, crowdsourced transcription projects, visualization tools, or other original and innovative projects that may be created by professors, library, or IT staff. Such projects have the potential to provide valuable tools and information to an international audience of learners. Without careful planning and execution, however, they can also all too easily slip between the cracks and quickly become obsolete.

Beyond exploring digital activity on campuses, the study identifies examples of good practice that institutions have developed to support the creation and long-term viability of these works. Interviews with over 125 project leaders, deans, provosts, library directors, senior staff of digital humanities centers, and library and IT staff engaged in various aspects of the digital creation process helped us to offer a framing of this topic that is intended to provide both faculty and administrators with a shared language for discussing the benefits and challenges of creating and supporting digital research projects as well as their goals and expectations about what the university and the different support units within it can provide.

Our initial interviews were followed by a deep-dive phase of exploration focused on the DH landscape at four campuses—Columbia University, Brown University, Indiana University Bloomington, and the University of Wisconsin at Madison. This research helped us to better understand how institutions were navigating this question, and what models they had taken on or were developing. These four

universities gave us a sense of the issues at institutions both public and private, both small and large, and both centralized and highly decentralized. The University of Wisconsin and Indiana University were chosen specifically because they already had some experience in developing campus-wide strategies for the support of digital projects. Columbia and Brown were chosen because much digital activity is taking place on each campus, but it was taking place within the context of less clearly articulated institutional strategies. In all cases, we set out to observe the current processes for providing support for digital projects, learn about faculty practices through a survey and interviews, and discuss with administrators their priorities and challenges in developing a campus-wide strategy.

Findings

- **Faculty are not just using digital tools and content; many see themselves as creating them, too.** In surveys conducted in select departments on our four "deep-dive" sites, nearly 50 percent of respondents reported not just making use of digital tools and collections, but also creating them. Though such creation may include developing databases or image collections for their own research projects, 64% percent reported that they intended their digital creations to be primarily for public use, and 72% percent reported that they or someone else would continue to add to or develop their digital projects in the future. This enthusiasm for making things suggests a greater need for institutions to develop systems to identify which projects require and merit their support, and the forms that support will take.
- **Even on campuses with designated DH centers, there is rarely an end-to-end solution** in place to support faculty from planning, to building, to preservation and outreach. While most campuses had multiple places for faculty to get support in planning, content creation, technical development, and even storage, some stages in the digital project life cycle seem not to be owned by any one unit: preservation emerged as an area of concern, and dissemination/outreach appeared to be most often left to the devices of the project leader.
- **Digital project leaders gravitate to whatever support they can find**, piecing together funding here, consultation there. Among the most common sustainability concerns cited by faculty in the survey were the scarcity of funding for ongoing development, lack of staff time to support their project, and technological capabilities and improvements. The result of a lack of overall strategy for support is that internal resources may be allocated to the loudest faculty member first, and not to projects based on potential impact; that intake is uneven, so it is difficult to predict what future investments will be needed; and that missing altogether may be consideration of some phases of the digital project life cycle: preservation, outreach, measurement of impact.
- **Lack of clarity about how DH work and outputs support institutional aims and who should "own" these outputs** makes it difficult for those planning deeper investments, whether in the form of a research support system including workshops and training, or as a more entrepreneurial lab effort for building new grant-supported works. Perhaps as a result, notions of how to establish the "value" of a project are often quite vague.

- **Despite increasing enthusiasm for engaging with "digital humanities," some administrators remain uncertain about just what DH is and whether or why it merits special consideration.** In many cases, the issue of the sustainability of digital humanities projects had not reached much beyond the library and academic departments. Where we did interview senior administrators, many were still seeking a firmer definition of what DH is, and several were also skeptical that DH merited its own kind of support, feeling it should be handled as any other research would be.

Success factors

The final report also outlines factors important to the success of more coordinated strategies:

- **Gaining support (financial and otherwise) from senior administrators to make digital scholarship an institution-wide priority**
- **Knitting deep partnerships among campus units, but especially the library, IT department, and digital research labs.**
- **Investing in people who are successful at creating and managing digital projects**
- **Rationalizing support to manage expectations and to build and preserve the projects deemed worth saving, without overtaxing support units**
- **Investing in some scale solutions, without overly limiting the creativity and research aims of project leaders**
- **Clearly communicating these pathways and expectations to faculty**

Roundtables held at each deep-dive site, with participation from unit leaders and administrators, permitted the discussion of our findings. These events consistently revealed areas of gaps and overlaps and differences in opinion concerning motivations for providing support, and led to brainstorming of new ideas for building coherent strategies across campus (not just the library, not just DH centers).

The final deliverables from the study include:

- **A final report**, which discusses three organizational archetypes—service model, lab model, and network model—for thinking about institutional motivations for supporting digital humanities and which provides illustrative profiles of the four deep-dive campuses, highlighting the models they are implementing and the opportunities and challenges they are facing.
- **The Sustainability Implementation Toolkit**, intended for campus decision-makers who are interested in undertaking an assessment on their campus. This includes interview guides, survey questions, and general guidance on conducting a landscape assessment on campus; suggestions for analyzing the data to help surface service overlaps and gaps; and a facilitation guide for hosting campus discussions on what a campus-wide strategy should address and include.

We hope that this report and toolkit will help faculty, campus administrators, and library directors to engage in productive conversations about the value that DH work delivers, about the direct and institutional costs required to undertake

and to support it for the long term, and about the most effective ways to marshal that support across the span of the institution. They may also aid university administrators and decision-makers in assessing the value of DH projects and in creating systems that can support faculty and their digital projects in ways that bolster the mission and aims of the institution.

Introduction

While faculty experimentation and engagement with digital humanities (DH) is growing rapidly, institutional strategies are still emerging to support the work that takes place around DH and the resources and tools that are produced by its practitioners. And different manifestations of digital humanities require very different types of support.

Much of the current excitement around digital humanities concerns the academic work that faculty can now conduct by virtue of learning to use the wealth of digital tools and techniques available to them. Faculty members and students are increasingly interested in such methods as data mining and text mining, and in new tools and virtual labs to engage their students. The methods and tools vary by discipline, and just as academic departments include methods classes that cover theory, analysis, and research tools because they are seen as central to the good practice of the discipline, the choice to support learning and experimenting with data mining and other digitally enabled methods will be discipline-driven and university-supported. The success that comes from the investment in teaching and learning these methods will be measured in ways that the university and the academy in general know how to measure: research is conducted and articles are written, courses are developed and taught, enrollments go up.[3]

Yet in addition to the general interest in professional development and methods training, there are many faculty and staff actively engaged in building sophisticated digital resources that are of scholarly merit and are valuable not just as outputs of a successful project, but are used by many others as the basis of new scholarship, and involve enough scholarly content for most to agree that they merit long-term support. Such is the case with the Stanford Encyclopedia of Philosophy, a substantial and growing collection of peer reviewed articles on topics in philosophy, and with the Valley of the Shadow, a digital collection of thousands of primary source documents from two communities during the Civil War.[4]

The best and most well-known of these may have been able to develop plans for future support, though sustainability is an ongoing effort. The Stanford Encyclopedia of Philosophy has an endowment, but also still actively seeks

2 Many campuses across the country offer workshops and training sessions as well as THATcamps (58 in 2013, up from 41 in 2012) and help organize presentations related to DH practices and projects. For example, see Duke University Libraries' Doing DH monthly series, organized by Digital Scholarship Services (http://sites.duke.edu/digital/training-events/past-events/doing-dh/), or the training offered by the University of Virginia Library's Scholars' Lab (http://www.scholarslab.org/events/). Humanities Research Bridge events (http://bridge.library.wisc.edu/Events.html) at the University of Wisconsin at Madison are run by library staff and staff from the Wisconsin Institutes for Discovery, a research center on campus.

3 Stanford Encyclopedia of Philosophy is available at http://plato.stanford.edu/. The Valley of the Shadow is available at http://valley.lib.virginia.edu/.

institutional support. The University of Virginia has agreed to continue to host Valley of the Shadow. Even experienced digital project leaders may struggle to identify ongoing sources of support to keep their projects updated, relevant, well-known and widely-used.[5] As more and more faculty engage in this work, what digital assets are being created as a result of this burgeoning digital development and how are they being supported for the long term? Given that academic institutions may not have just one or two of these projects to think about, but many more as time goes on, does the university writ large see its role in supporting these living artifacts, given that they represent the results of faculty research? Beyond basic questions of storage and preservation, whose job is it to update them and continue to promote them? To what extent are universities and colleges developing ways to encourage the next generation of these projects such that they will be inherently easier to manage and sustain over time?

Why focus on the humanities?

The issues concerning sustaining digital resources are not specific to any one discipline, so this report's focus on the digital humanities in particular merits explanation. On one hand, sophisticated public projects in the social sciences and sciences have much in common with major digital humanities resources, in their intent, their public-facing nature, and their serious research mission. And yet unlike projects generated by faculty in the humanities often have less access to technical infrastructure and capacity—whether this means programming support, storage, and servers, or even tech support—than do those in the sciences. In many cases, humanities faculty may find themselves entering new terrain and taking on new responsibilities, often without the training or guidance that may be available to their peers in the sciences or social sciences.

Despite these handicaps, digital projects in the humanities may be particularly well positioned to reach audiences far beyond the academy. Unlike a database of protein sequences, for example, that is likely to be used only by science faculty, graduate students, and other professional researchers,[6] many digital humanities projects can appeal to a broader public, even if doing so was not part of their creators' intent.[7] Just as citizen science has several notable examples of projects hatched in the academy, but with impact well beyond it, digital humanities have that same promise. Those who work in public history and other areas of the public humanities, such as popular culture and the arts, are trying to build bridges from

5 Nancy L. Maron, K. Kirby Smith, and Matthew Loy, *Sustaining Digital Resources: An On the Ground View of Projects Today* (Jisc, 2009), http://www.sr.ithaka.org/research-publications/sustaining-digital-resources-ground-view-projects-today.

6 See, for instance, the National Center for Biotechnology Information's Protein database at http://www.ncbi.nlm.nih.gov/protein.

7 In the United Kingdom, universities places an emphasis on "public engagement," whereby scholars actively reach out to the world beyond the academy's walls, and the National Co-ordinating Centre for Public Engagement (http://www.publicengagement.ac.uk/) was founded in 2008 to promote outreach and work with communities outside academia. In the United States, however, such outreach activities are rarely a part of the dominant academic culture.

campus to the greater community by initiating and facilitating ongoing dialogs with lifelong learners, often through digital means.[8]

Is a specific strategy really needed?

While there are few campuses today that can claim to have a coherent strategy for sustaining digital humanities work, this is not to suggest that universities and colleges are unaware of the many elements this involves. To be fair, many campuses have already begun to develop policies in related areas:

- *Data management*. It has become increasingly important for campuses to develop strategies for the handling of data, including how research outputs are to be managed, deposited, costed, and so forth,[9] as mandated by federal funders including the National Science Foundation.[10]
- *IT strategy*. Many campuses have spent a great deal of time and effort in elaborating general, campus-wide IT strategies. Often these are extremely broad in scope, and may encompass everything from the sourcing and maintenance of enterprise business systems to campus email, data storage, teaching and learning platforms, and the hardware and software that researchers
  and students use in the course of their work. It may sometimes be presumed that digital humanities work will be adequately covered by provisions made to support research data more generally.
- *Institutional repositories*. Libraries that have invested in setting up institutional repositories may see them as a solution for storage of the digital assets of a DH project.

Many of the issues that confront digital humanities project leaders could be addressed through these policies, to some extent. Yet none of these alone is enough to guide faculty who become involved in long-term digital projects. The presence of an institutional repository is likely to offer a possible solution for the question of where digital assets should be deposited if faculty participate, but it won't address upgrades that many faculty want to make. Having a Data Management Plan in place is also important, particularly for grant-funded digital projects, but such plans tell more about where materials will be held, and less about how they will be developed over time. Any given campus may have several elements in place, and different departments may have taken significant steps on each of these issues, but having an articulated plan addressed specifically to digital project leaders and their research outputs is still more often an aspiration than a reality.[11]

8 Anne Mitchell Whisnant's 2010 project Driving through Time: The Digital Blue Ridge Parkway (http://docsouth.unc.edu/blueridgeparkway/) is one example of a digital public history project with educational resources devoted to learners of different ages.

9 See, for instance, the DMP Tool (Data Management Plan Tool) developed by the University of Virginia Library, the California Digital Library, DataONE, and several others, which aims to help project leaders write data management plans for their grants that meet funder requirements. It is located at https://dmp.cdlib.org/.

10 More information about the National Science Foundation's data management plan mandate, which went into effect in January 2011, is available at http://www.nsf.gov/pubs/policydocs/pappguide/nsf13001/gpg_2.jsp#dmp.

11 This point was made, specifically concerning libraries' "general lack of policies, protocols, and procedures," in Tim Bryson et al., *Digital Humanities: SPEC Kit 326* (Washington, D.C.: ARL, 2011).

Background

In 2011, Ithaka S+R published *Funding for Sustainability*, reviewing the funding practices supporting the creation of digital resources in academic and heritage organizations, and their implications for long-term sustainability.[12] It found that funders make assumptions about long-term support for the collections and tools they have subsidized, expecting that the institutions hosting those resources will support them in the future; similarly, project leaders rely on the support of their host institutions, at very least for staff time, office space, and other in-kind contributions. These expectations are rarely explicit or formalized, and time and again on campuses across the country this lack of communication has resulted in a situation in which enterprising scholars create projects but lack the means to continue to maintain them over time. Often, these resources are left to sit quietly somewhere, degrading not so gracefully and dependent on the good will of library or IT staff and the weekend hours of the faculty PI for maintenance, or simply considered "complete" and no longer updated. This research uncovered layers of assumptions concerning the role of the host institution and pointed to the need to better understand the value for the institution in supporting these projects.

Funders have begun to require their grant applicants to submit along with their applications not just plans for managing data generated by the proposed project, but also sustainability plans. The National Endowment for the Humanities states that sustainability plans must discuss both the "long-term financial needs of the project and…how the project will continue to meet its goals after the grant has ended."[13] By requiring project leaders to outline these plans in advance, funders hope the resources they support will benefit not just the individual researcher or research team, but others who will come along after. In submitting these grant applications, researchers commit themselves to sustaining the resource to be created (though all parties acknowledge tacitly that little by way of enforcement—or funding—is possible once the term of the grant is passed); but even as it is the scholar who takes responsibility for delivering the final digital project, it is often that scholar's home institution that comes to assume some

12 Nancy L. Maron and Matthew Loy, *Funding for Sustainability: How Funders' Practices Influence the Future of Digital Resources* (HEFCE, 2011), http://sr.ithaka.org/research-publications/funding-sustainability-how-funders-practices-influence-future-digital.

13 National Endowment for the Humanities, Office of Digital Humanities, *Guidelines for Digital Humanities Implementation Grants* (2014), http://www.neh.gov/files/grants/digital-humanities-implementation-feb-2014.pdf, p. 8.

responsibility for, or at least comes to play a pivotal role in, keeping that resource alive, by default if not design.

We pursued these questions in a Jisc-funded study of institutions in the United Kingdom, and our research helped to illuminate just how distributed were the costs and activities related to supporting digital projects on academic campuses.[14] While the UK study took a wide view, examining the challenges at faculty-, library-, and museum-led efforts in the digital sphere,[15] the present study focuses specifically on higher education institutions and examines the digital humanities as this area of endeavor exists on university and college campuses today. Our goal is to take a snapshot of current practice, identify examples of good practice, specifically at the institutional level. We hope to provide support both to project leaders and to administrators who may be considering future investments in DH.

Methodology

In order to understand existing conditions for supporting digital humanities work and outputs, we first established a baseline definition of the stages of support that a comprehensive digital humanities strategy would include. We based this definition on our previous research in the United Kingdom and on our experience working with and researching the sustainability practices of hundreds of digital projects over the past seven years. While the stages of a project's life cycle depicted in *Figure 1* do not always occur in the exact sequence it shows, the figure is a useful way to understand the full range of activities most digital projects will need to address at some point in their development and long-term support.

The stages we identified were:

- **Project planning**, encompassing the decision-making processes leading up to the creation of a project, from defining the scope of the project, to determining who will participate on the project team, reviewing its data management plan, and discussing sustainability goals.
- **Content creation**, which may represent creation of original born-digital scholarship, digitization of images, documents or other analog materials, or the production of content to populate a database.
- **Technical development**, which includes programming support to develop databases and to design user interface and any tools needed for the project.
- **Storage**, which covers the format and scale of the technical infrastructure that houses the data that make up the project.
- **Project management**, that is, the regular oversight of and responsibility for managing and developing the project.

14 Nancy L. Maron, Jason Yun, and Sarah Pickle, *Sustaining Our Digital Future: Institutional Strategies for Digital Content* (HEFCE, 2013), http://sr.ithaka.org/research-publications/sustaining-our-digital-future.

15 For a discussion of strategies specific to cultural heritage institutions, see Nancy Maron and Sarah Pickle, *Searching for Sustainability: Lessons from Eight Digitized Special Collections* (ARL, November 2013) http://sr.ithaka.org/research-publications/searching-sustainability and its related case studies; as well as Sarah Pickle and Nancy Maron, *Collections without Borders: Sustaining Digital Content at Cultural Institutions: A Case Study of the Museum of Anthropology at the University of British Columbia* (forthcoming 2014).

- **Technical upkeep**, which includes the ongoing need that most if not all projects will have for technical maintenance and upgrades, whether of the interface, discovery tools or optimization for search, or newer versions of tools and platforms the project makes use of.

- **Preservation**, that is, the activities that go into ensuring the long-term accessibility of the digital content.
- **Dissemination**, which includes any activities related to sharing the finished project with its audience, whether that means hosting on a public platform or strategic audience outreach.

Figure 1. Digital project life cycle

Our research included two phases. A landscape phase involved background reading and desk research as well as in-depth interviews with faculty practitioners, library directors, and university administrators at twelve campuses, public and private, across the country. In addition to providing us with examples of challenges and good practices concerning the stages of support, this background work also permitted the research team to begin to develop profiles of the institutional strategies we observed. This made it possible to choose four locations that we would explore more extensively—those we call our "deep-dive" locations.[16]

All four had long experience in DH in some way, with examples of projects indicating significant faculty engagement. In considering how they would inform our understanding of institutional strategy, we chose two campuses that had articulated a strategy for supporting digital PIs (Wisconsin, Indiana) and two campuses at earlier stages in developing such strategies (Brown, Columbia). This group also offered examples of public (UW, IU) versus private (Columbia, Brown) campuses, and models of centralized support (Brown) versus highly decentralized organizations (Columbia, Wisconsin).

For the deep-dive phase of our project, we worked closely with partners at Indiana, Wisconsin, Columbia, and Brown, interviewing faculty, staff, and administrators, and conducting faculty surveys. Only faculty in select departments were surveyed; these departments—which were predominantly, but not exclusively, in the humanities—were chosen with the help of our campus partners because they were viewed as the sites of the greatest DH-like activity on campus and thus the departments where the issue of the sustainability of faculty-created digital resources was most prominent. Once the interviews and surveys had been completed, campus visits included debriefing sessions and roundtable discussions with key stakeholders at each campus. In total, 126 interviews were conducted in the landscape and deep-dive phases.

A full description of the methodology is available in appendix A.

16 The original proposal called for just two deep-dive studies. In discussion with our advisory committee, we decided to expand the group to four, in the hope that this would permit our findings to be more easily generalizable.

Acknowledgments

The authors wish to thank the National Endowment for the Humanities' Office of Digital Humanities for generously funding this work as a Digital Implementation Grant. We extend special thanks to Director of the Office of Digital Humanities Brett Bobley and to Senior Program Officer Perry Collins for their support and thoughtful input throughout the project.

Our campus partners made the difficult challenge of quickly deciphering campus history, strategy, and dynamics more of a pleasure than a task, helping with everything from identifying interview subjects and planning meetings, to wrangling names to deploy the survey. We would like to single out the faculty, staff, and administration at Brown, Columbia, Indiana, and Wisconsin for welcoming us and discussing this question with such candor, and to give very special thanks to our primary partners at those campuses: at Columbia University, Barbara Rockenbach, Director of Humanities and History Libraries; at Brown University, Harriette Hemmasi, university librarian; at the University of Wisconsin at Madison, Lee Konrad, Associate University Librarian for Technology Strategies and Data Services, and Carrie Roy, Research Associate in the Library Technology Group; and at Indiana University Bloomington, Brenda Johnson, Ruth Lilly Dean of University Libraries, and Andrew Asher, Assessment Librarian.

In addition, Dean Rehberger, Richard Spies, and Stanley Katz offered valuable guidance and feedback that have deeply informed the final version of the paper.

Throughout the project, we have been guided by the wise counsel of our advisory committee, who met with us at key touchpoints throughout and reviewed presentations and drafts of the survey and final paper. The members of the committee were:

- Richard Detweiler, President, Great Lakes Colleges Association
- Martin Halbert, Dean of Libraries, University of North Texas
- Stanley N. Katz, Director, Center for the Arts and Cultural Policy Studies; Lecturer with rank of Professor, Woodrow Wilson School of Public and International Affairs; President Emeritus of the American Council of Learned Societies
- Maria C. Pantelia, Professor, Classics, University of California at Irvine; Director, Thesarus Linguae Graecae®
- Richard Spies, former Executive Vice President for Planning and Senior Advisor to the President at Brown University, former Vice President for Finance and Administration at Princeton
- Ann J. Wolpert,[17] former Director of Libraries, Massachusetts Institute of Technology.

As with any project, our Ithaka S+R colleagues provide support in many ways. We thank our colleagues Nancy Kopans, Amy Rose-Perkins, and Heather Jensen for their read of the section on copyright and advice on privacy issues in the survey data and Ithaka S+R Managing Director Deanna Marcum for her valuable guidance throughout the project.

17 Ann Wolpert passed away in October 2013, but her guidance and keen observations, particularly her admonishment to offer solutions and not simply to talk about problems, shared at the initial project meetings, have helped to guide this work.

Digital Humanities Activity on Campus: Results of Faculty Surveys on Four Campuses

To better understand the scope and nature of DH activity on campus and the tactics faculty are using to navigate their way through creating, managing, and supporting their digital resources, faculty surveys were conducted at the four deep-dive campuses.[18] The findings represent responses to the survey and makes no claims to be representative of the share of DH activity more broadly at these or other schools; it was distributed to all faculty members in several departments on each campus, which were selected by the research team's project partners on those campuses as the departments with the greatest level of activity in working with and developing digital humanities-like resources.[19] While the findings represent just four campuses, they demonstrate some interesting trends that bear further examination.[20]

Nearly all respondents reported some degree of engagement with digital collections or tools, whether for research or for teaching. This was somewhat predictable, given the low bar needed to qualify as "engaging" with digital humanities. Of greater interest, however, is the fact that of those who reported using digital collections or tools, nearly half reported that they have also created or managed their own digital projects (*Figure 2*).

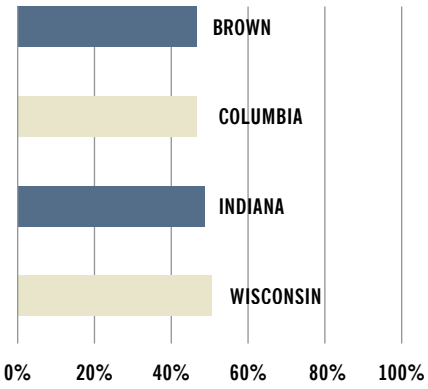

Figure 2. Percentage of respondents who have created or managed digital projects

While each campus was able to choose the departments to survey, in every department surveyed, whether history, English, music, or something else, no less than 29% of respondents self-identified as digital creators. Furthermore, these creators were of all ranks (*Figure 3*). While a little over a third of full professors and assistant professors who answered our survey indicated that they have created or managed digital resources, almost half of the associate professors who responded

18 *Digital resources* is defined in the questionnaire as primary-source collections, secondary-source collections, informal scholarly communications (blogs, Twitter), digital platforms (e.g., wikis), data produced from computational methods, and software or tools.

19 Because the intention of the surveys was to hear from the faculty in the departments with the greatest level of DH activity, a few of the departments surveyed (e.g., Sociology at Wisconsin, the School of Information and Library Science at Indiana) are not humanities disciplinesa.

20 The complete methodology is available in appendix A.

have done so. Although the differences among the three ranks are not statistically significant, they are noteworthy. One hypothesis about why more associate professors are creating digital resources than their peers is that, as faculty with tenure, they have more freedom to experiment with new types of resources, but as faculty who are generally younger than their full professor counterparts, they are also more open to digital experimentation. As one of the junior project leaders we surveyed put it, "Will my project 'count'? I really don't know, and I need to be protective of my time in case it doesn't."

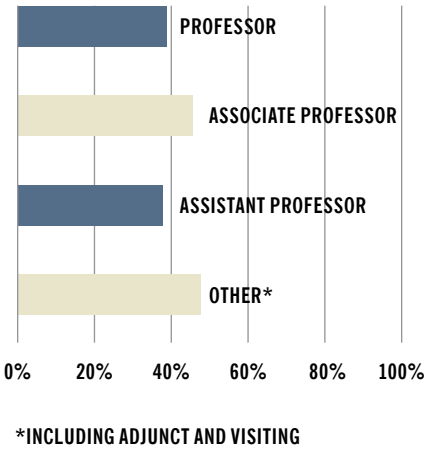

Figure 3. Percentage of respondents who have created or managed digital projects, by professional rank[21]

Of those who indicated that they have created or managed digital resources, 64% of the resources cited were intended to be primarily for public use, which we defined as use by their peers or the general public (*see Figure 4*). The survey questionnaire had noted that examples of such "public use" projects could include open-access databases or crowdsourcing projects; by way of contrast, the survey questionnaire also indicated that examples of resources intended primarily for "personal use" could include research notes, materials for a specific course being taught, and research data.

Not only did many faculty creators see their works as intended for public consumption, but many anticipate that their work will require ongoing support into the future. Faculty members were asked about their long-term expectations with regard to adding to or maintaining the resources they created or managed; in response, they indicated that 72% of the resources cited are expected to continue to receive additions or development by either the respondent or someone else (*Figure 4*).

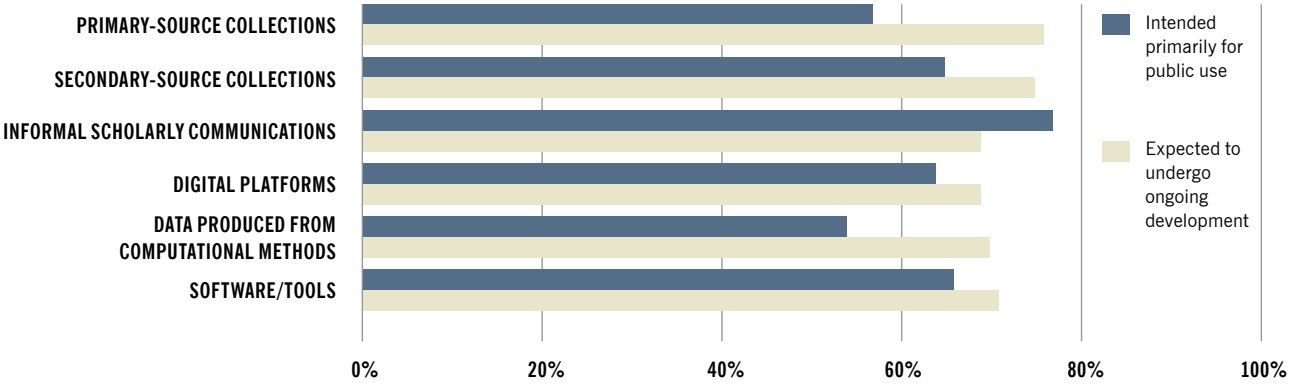

Figure 4. Percentage of digital resources, by type

Taken together, these data do not merely suggest that there is a high level of creation taking place among faculty in the humanities, but also that these creators have relatively high expectations for the future of their resources. Not only do faculty members feel that there is more work to be done on their websites, tools, and other digital projects, and that these projects will continue to grow; but also, because these projects are intended primarily for public use, they feel that these resources will likely require some ongoing attention to ensure, for example, that the public knows about them (dissemination) and can use them (technical upkeep).

21 The percentages shown are based on faculty at Brown, Columbia, and Indiana University. The research team was not provided with the ranks of faculty members at the University of Wisconsin at Madison.

What are faculty members building?

Provided with a list of types of digital resources, all respondents were asked to indicate which they have used and which have created or managed (*Figure 5*). While nearly 50% of all respondents indicated that they created or managed at least one type of the digital resources listed, this percentage comes into sharper focus when the aggregate figure is broken down by resource type. The type of resource most commonly created or managed by respondents is a primary-source collection (33%), although about 20% of respondents have created or managed informal scholarly communications (e.g., blogs, tweets), a digital platform (e.g., wikis), or a secondary-source collection.

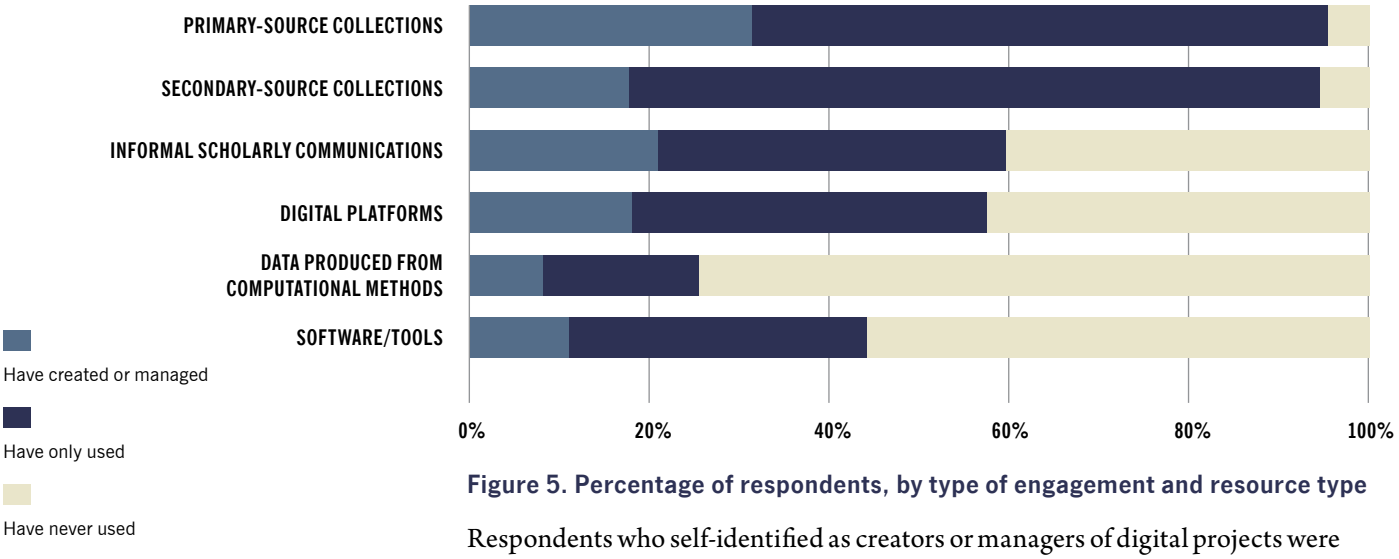

Figure 5. Percentage of respondents, by type of engagement and resource type

Respondents who self-identified as creators or managers of digital projects were then asked to report on their "top-priority" digital project, so that we could learn more about the specific paths taken to support these works over time. Respondents to this question reported on a broad range of project types, in terms of scale and scope, content and intent, from major public-facing digital initiatives, such as OpenFolklore (a display and search platform for primary and secondary materials, comprising digitized books and born-digital journals, from the field of folklore, developed by a team of library staff, faculty, and members of the American Folklore Society),[22] and smaller, more niche projects created by faculty, such as wikis created specifically for classroom use and spreadsheets of data collected for research.[23]

In seeking to meaningfully classify the different types of resources faculty reported creating or managing, the research team developed a handful of categories based on the characteristics that we believe most directly influence the sustainability of these projects, i.e., the amount of technical attention that will be needed over the long term. These categories are informed by the survey responses and by our interviews about the types of assets involved and the level of technical complexity of these digital resources, as well as their creators' ambitions in

22 Open Folklore, a partnership between the University of Indiana Libraries and the American Folklore Society, is available at http://openfolklore.org/.

23 For information about Columbia's Wikispaces, see http://ccnmtl.columbia.edu/our_services/tools/columbia_wikispaces/, and for an example of a large set of research data, see Myra Marx Ferree's Abortion Study Database at http://www.ssc.wisc.edu/abortionstudy/.

developing them (for whose benefit the resource was created and with what expectations concerning longevity).

When the research team categorized the projects in this way, it became evident that among the many faculty-created projects, 70% were collections of content that appeared either to have been built using existing platforms or templates, such as wikis, OnCourse, or Omeka, or to consist of digital assets that would lend themselves to a similar format. Accordingly, the level of technical involvement in the ongoing management of the resource is expected to be low relative to more "complex" projects. Of these "simple" projects, 55% of these were template-based content collections, 11% were course websites, and 3% were spreadsheets of data (*Figure 6*).[24]

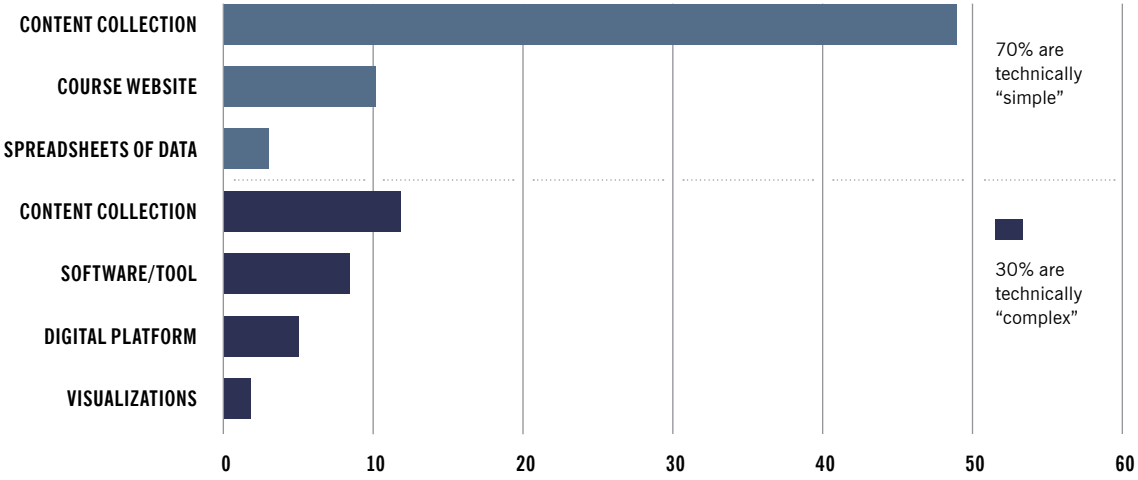

Figure 6. Number of top-priority digital resources, by type

By way of contrast, other projects appeared to be more complex and to require more technical involvement in their ongoing management. Sometimes this was because of the scope or variety of content types involved; at other times it was due to the integration of tools and customized navigation with original content. Approximately 30% of respondents' top-priority digital resources fell into this category (*Figure 6*). These included more complex and elaborate content collections with customized functionality and tools (13% of top-priority resources), software (9%), platforms (6%), and visualizations (2%). These types of resources often require ongoing project management and technical support to ensure that they are working properly, they look fresh, their content is up-to-date, and their users are well cared for, and they may require some measure of outreach support, so that potential users know where to find them. Examples of these types of projects include Sheila Bonde's Saint-Jean-des-Vignes: Archaeology, Architecture and History, which makes available field reports from her archeological research at the monastery and rather complex visualizations of the site itself, access privileges to different parts of the building model presented on the site, and more, and Massimo Riva's Virtual Humanities Lab, which is not only

24 Examples include Columbia's WikiSpace course sites, Brenda Nelson-Strauss's Black Grooves WordPress music review blog (http://www.blackgrooves.org/), and Robert Hauser's Wisconsin Longitudinal Survey datasets (http://www.ssc.wisc.edu/wlsresearch/).

a portal for DH projects in Italian Studies at Brown University, but also a platform to help scholars encode and annotate texts.[25] Classifying projects in this way does not suggest a value judgment; rather, it is a way to determine which may pose the more significant challenges to long-term support. There are good arguments for why certain digital projects require and deserve custom-built software, but institutions taking on long-term support will want to measure the costs and benefits of doing so.

How are these resources funded?

Most digital resources created by faculty who responded to our questionnaire were developed with benefit of some grant support. While 36% of respondents said their projects were aided by external funding, 44% benefited from internal grants. In-kind support from host institutions also played a role for just over half of the resources (*Figure 7*).

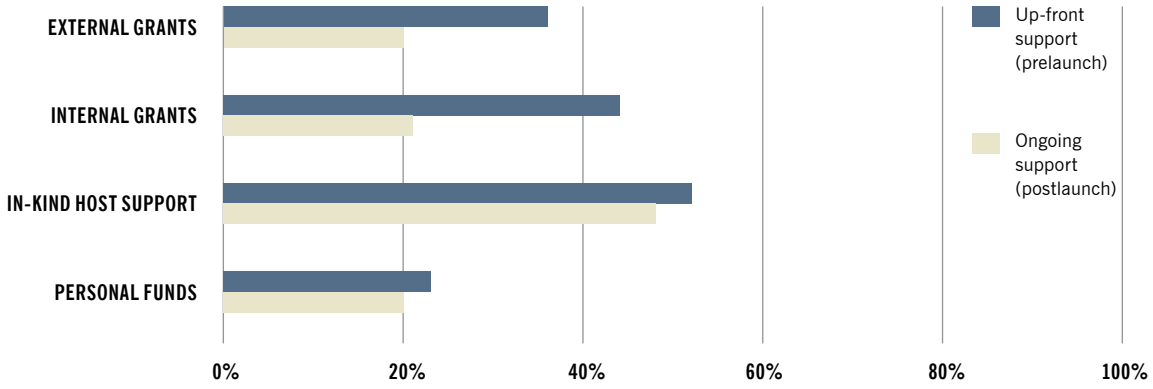

Figure 7. Percentage of respondents' top-priority resources, by type of funding or gifts received

After the digital resources are launched, the percentage of projects receiving grant support—both internal and external—drops by almost half. Many faculty members and others interviewed reminded us that indeed, the available funding from private funders and government agencies alike is almost exclusively for new projects deemed to be innovative, not to keep managing an existing project over time. As one respondent explained, "Adequate funding is not provided to generate [new] content, maintain infrastructure, and develop new technological methods."

On the other hand, the number of project leaders who reported receiving in-kind assistance from their host institutions falls only slightly from start-up to post-launch, as does the number of digital resource projects whose leaders report helping to support them by use of personal funds. For those who continue to work on their projects, in-kind support and personal investments of time and money are often the primary sources of support. Indeed, only a few project leaders who responded to the survey reported that they have budgets for their projects. Of those, most reported budgets around $10,000, although a couple of grant-funded

25 Saint-Jean-des-Vignes: Archaeology, Architecture and History is available at http://monarch.brown.edu/index.html), and the Virtual Humanities Lab is available at http://www.brown.edu/Departments/Italian_Studies/vhl_new/.

projects reported budgets of $200,000 or more. In short, informal forms of institutional support appear to be the most common source of assistance, by far.

That institutions are continuing to invest their time and money in supporting DH projects is worth underscoring, as this suggests that the level of support needed may well increase, as more faculty become involved in experimenting with and building digital projects, with no clear "end" date. When asked what they felt they needed most in order to address their sustainability concerns, several faculty members noted that they need "solid, recurring institutional support," as one survey respondent expressed it. Others suggested internal grants that could back the "continuing management and development of existing projects (rather than just the establishment of new ones)," and many lamented the fact that the support units on their campuses do not have enough time to provide ongoing attention to and upgrades for more projects. Despite one project leader's high opinion of the quality of his university's library, "since we don't pay them, they don't have an incentive to do a major overhaul of our website, which is what is really needed."

Although the vast majority of respondents indicated that they are concerned about the future of their resources, implying that their resources would benefit from some kind of ongoing support, only 21% reported that they regularly track usage or other impact metrics to demonstrate the impact of their resources. The remaining 79% do not track usage or other metrics.

What emerged from the surveys of selected departments on the four different campuses was a portrait with several common characteristics: faculty members are undertaking all sorts of projects, and many of them intend those projects to be made publicly available and plan to continue to develop them over time. Just who will devote the time to the upkeep is a thorny issue, as is who will fund this work. Yet the chorus of enthusiastic and engaged project leaders includes many who have projects for which some stages probably could be accomplished using scale solutions—templates for design, and storage of digital assets in an institutional repository, for a start. That said, while many agree that some degree of standardization is possible and important, implementing such systems depends on the individual campus and the ability to encourage or mandate project leaders to comply.

About 30% of digital projects faculty reported on at the four deep-dive campuses represent digital initiatives with the breadth, innovative potential and complexity to pose significant sustainability challenges. How are campuses tackling the volume and variety of projects that faculty are creating? In the following section, we share our observations of campus-based strategies for supporting digital research projects, through the stages of their life cycle.

Campus Strategies for Supporting Digital Humanities Activities and Outputs

On most university and college campuses, there are few articulated campus-wide strategies for supporting faculty that address the full life cycle of their digital humanities projects, from the planning stage, through building and launch, to ongoing preservation and dissemination. Most often, faculty and staff piece together a plan as needed, with key stakeholders including the administration, campus library, campus IT, various academic departments, and, in some cases, formal digital humanities centers or scholarly computing units.

In some cases, the paths can be fairly clear. At Brown University, for example, almost all faculty surveyed named one of two central units on campus as the place they relied on for support at several stages of their projects. The choice of starting points for most people seemed quite clear: humanities faculty who responded to the survey largely relied on the library as their first stop, and as the main place to go for most stages of their projects, although those faculty interested in developing course websites or other pedagogical tools knew to approach the Instructional Technology Group in the IT department instead. Such clear lines of demarcation are not always the case. Faculty project leaders at Wisconsin, for example, cited a wide range of starting points and units they depended on in planning, developing, and maintaining their projects, from the Instructional Media Center in Communication Arts and the Social Science Computing Cooperative to the library and Academic Technology. In most cases, including at Columbia, Wisconsin, and many other campuses, faculty project leaders are responsible for piecing together the types of support they require from a range of units on campus.

As others have pointed out, there is no one right answer when it comes to the sort of model a particular campus might choose to implement.[26] But the absence of a plan can lead to some undesirable outcomes:

- **Overlaps in service provision.** Aside from the obvious issue of having more than one unit handling costly, specialized activities like digitization, there is the question of which unit is best positioned to deliver that service.

26 Bethany Nowviskie, "Asking for It," blog post, February 8, 2014, http://nowviskie.org/2014/asking-for-it/.

Are project managers in an IT unit able to support the technical needs of a digital humanities research project when it comes to metadata and other elements close to the scholarly aims of the project? Do library technical staff have the time and training to deliver user-interface design geared to drive user engagement on a crowdsourcing site? While many units could fill certain roles, should they be doing so?

- **Gaps in service provision**. Two gaps that surfaced most often at the campuses we studied were digital preservation and dissemination. Faculty project leaders cited a range of places responsible for supporting their long-term preservation needs. So many places, in fact—from their home departments, to the library, to an IT unit—that, as one librarian suggested, it seems more likely that what preservation entails may not be clear. If faculty report that they can count on their humanities department to take care of digital preservation, this may suggest that they have only a vague notion of what preservation requires. Dissemination was another topic that was often not "owned" by any one unit on a campus. Some faculty practitioners defined dissemination as their own responsibility: They would get the word out about their digital resource at the appropriate conferences and online forums, as they would do for any work of research. And some library staff wondered whether offering a public platform, either via the institutional repository or by other means, and making it openly available was all that would be needed to disseminate the digital work. Interviewees, including library staff, did not name the university press as a key stakeholder in discussing ways to improve the impact of digital projects. And yet, largely absent from the survey findings and data gathered from interviews and campus roundtables was discussion of a more unified approach to sharing more actively the results of digital research, through targeted campaigns or other coordinated outreach efforts.[27]

Dissemination was another topic that was often not "owned" by any one unit on a campus.

- **Risk to the outputs of digital research projects**. While not every digital artifact created as a DH project actually merits a long-term sustainability approach, even for those that represent a substantial investment and are deemed to be of significant scholarly value, there are often uncertain provisions for long-term support.
- **Faculty project leaders' dissatisfaction**. While some may relish the entrepreneurial role, other digital project leaders express frustration in having to knock on many doors.
- **Poor (unstrategic) decision-making**. Project leaders and unit heads described systems that depended on chance, circumstance, and the persistence of project leaders. The existing methods for allocating precious resources tend to be understrategized, with support going to those who arrive at the right time, or who make their case loudest. This tends to be the situation most often where providing support for digital humanities projects is just one of many roles that staff may be playing. Systems for selecting which projects to take on and what level of support to offer them are beginning to emerge at some institutions

27 This is in line with findings from earlier research. A 2012 survey of Association of Research Library members focusing on the investments these libraries are making in their digitized special collections revealed that, although nearly 80% of responding institutions regularly create finding aids for their collections and highlight them on their website, closer to 43% regularly engage in more "active" outreach, such as communicating with faculty members or class instruction. For more, see Nancy L. Maron and Sarah Pickle, *Appraising Our Digital Investment: Sustainability of Digitized Special Collections in ARL Libraries* (Association of Research Libraries and Ithaka S+R, February 2013), http://sr.ithaka.org/research-publications/appraising-our-digital-investment.

(at New York University, for example); other places offer seed grants and a competitive selection process. But too often, the scenario for support is haphazard and leads to a situation in which, as one library staffer described it, "the likelihood of success of the project depends on where you happened to go for support."

Some institutions, however, have taken steps to engage more deeply in supporting digital research projects and collections. In this section, we will highlight a few structural archetypes and offer thoughts on some of the factors that might help determine which models are best suited for different campuses, based on institutional priorities and capacity.

The current strategies of support for creating and sustaining digital research projects on campus can be described under three broad categories. Two of them, the service model and lab model, are already in operation and have distinctive benefits and drawbacks. The third, what we will call the "network" model, is for now more of a model with promise, an idea that describes a system several campuses seem to be on the brink of putting into action.

Campus models for support

The service model

Whether led by DH Centers, libraries, or IT units, a common model for supporting DH could be described as a service model, where the unit seeks to support faculty and students in their work, whether that is mastering a new methodology or building a new digital resource. In this model, the service unit seeks to meet the demand expressed by faculty, often with a strong focus on meeting an individual's research needs.

There has been a great deal of conversation devoted to the role that libraries play or could play in supporting digital content and digital humanities projects created both by academics and staff on their campuses. At the root of these discussions is always the mission of the library and how broad that mission should be.

Some feel they have a particular stake in the role of the library as content curator, given that the organization of data, creation of metadata, and concerns about long-term preservation are all core values of the library already. As Lee Konrad, associate university librarian for technology strategies and data services at Wisconsin, has put it, his library aims to "ensure the sustainability of the scholarly record no matter what form that takes," analog or digital. In other cases, libraries see themselves as a critical part of helping to develop new projects. "It's an extension of the library's role to facilitate the creation of knowledge," according to Mike Furlough, former associate dean for research and scholarly communications at Pennsylvania State University.

Most librarians have longstanding personal and professional relationships with many humanities faculty, based on common interests and the need for robust collections of materials to support work in the humanities. Moreover, in recent years, libraries have also increasingly been hiring and "re-skilling" staff to support broader digital scholarship services so that they are able to assist with the

development of more elaborate functionality and software beyond what is already available for the unit's own digital collections.[28]

Existing library infrastructure investments often make the library a natural home for digital humanities projects. Librarians are comfortable working with metadata and the library may already have repositories for hosting digital assets, so some DH projects may fit fairly easily within the library's existing technical infrastructure.

Given the competencies already on offer at many academic libraries,[29] what their role could or should be in terms of supporting DH work is less clear. Some have suggested that there is an important service role to be played in helping faculty to execute the projects they have conceived and for which they have secured funding.[30] The debate continues within the community of DH practitioners, however, concerning whether libraries ought to see their role in DH as a "service model" at all. Some have argued that this undervalues the research-oriented work that librarians do. DH-focused librarians, in particular those who have PhDs in a humanities field, see their work not as supporting research, but as research, period, and they view the relationships they have with faculty as being most productive when they are partnerships of equals.[31]

"Lots of people [on campus] are doing pieces of it," says Patricia A. Steele, "but no one seems to have an overall view of how the parts [of a project] all fit together, and that's something that we can do."

While library staff may have some or all of the specific technical skills needed to support digital humanities projects, they could assume a valuable role as project managers by drawing together the resources from around campus, wherever they are. "Yes, lots of people [on campus] are doing pieces of it," says Patricia A. Steele, dean of libraries at the University of Maryland at College Park, "but no one seems to have an overall view of how the parts [of a project] all fit together, and that's something—with our organizational skills and with the kinds of ties that we have—that we can do for the campus."

Strengths of the service model

The service model suggests a stance of support, where the unit, whether a library, IT department or other center, offers guidance, training, and consultation to faculty members who come to them for help. The institutional mission may be focused more on "raising all boats" by offering extensive training, hosting workshops and conferences. This model may also support faculty in building digital projects, as much as staff time allows; but it is unlikely to be the main focus of activity.

Many of the features discussed above are vital elements of offering support to project leaders, so that their work will be developed using standards, so that it will be deposited on a platform that will offer access to others, and so that some staff time will be devoted (possibly) to ongoing content preservation.

28 See, for example, Columbia University Libraries' The Developing Librarian Project, which is available at http://www.developinglibrarian.org/the-developing-librarian-project-columbia-university-librarians/.

29 Chris Alen Sula, "Digital Humanities and Libraries: A Conceptual Model," http://chrisalensula.org/digital-humanities-and-libraries-a-conceptual-model/.

30 Jennifer Schaffner and Ricky Erway, *Does Every Research Library Need a Digital Humanities Center?* (OCLC, 2014), http://oclc.org/content/dam/research/publications/library/2014/oclcresearch-digital-humanities-center-2014.pdf, which seeks to identify a variety of ways research libraries can address the needs of digital humanists on their campuses.

31 See, for example, Trevor Muñoz, "Digital Humanities in the Library Isn't a Service," blog post, August 19, 2012, http://trevormunoz.com/notebook/2012/08/19/doing-dh-in-the-library.html.

Drawbacks of the service model

Service models can have certain challenges as well. Faculty who do wish to build more innovative or larger-scale projects may find that in working with the university library they do not have access to the range of development skills they require. Even where existing library staff do have the particular skills a faculty member's project may require, as library staff they may very well have other, more traditional library roles to play. Elli Mylonas, for example, is senior digital humanities librarian at Brown University Library. An acknowledged expert in electronic text methodologies, she has a hybrid role, serving as a subject specialist for classics, as well. As faculty pointed out, her work has been of critical importance to them, but her time is limited.

There is as well a more pervasive challenge, which is also a more subtle one. As service units, libraries—and this seems to hold for IT units, too—can be seen as less than full partners in project development. This topic has become more fraught in recent years, as credentialed scholars from a range of humanities disciplines, armed with PhDs, have entered the library workforce in digital humanities coordinator roles. While supporting faculty work is certainly part of their mandate, many of them are digital project leaders themselves, with scholarly agendas to pursue. Reframing the role of the library as a scholarly partner is an important first step, which is supported by having the right staff, but this may not solve the problem of addressing the needs of faculty whose projects require specific types of support, whether project planning, programming, or user interface design.

"Centers that fail [do so because they] spend a lot of time doing things on campus. . . .You need to grow the projects first, then find money for them."

Finally, choosing a service-model approach—an approach that assumes that the service provider will be catering to a broad range of faculty, and meeting them where they are in terms of needs (e.g., training and project support)—may be at odds with a more research-focused approach. As Neil Fraistat, director of the Maryland Institute for Technology in the Humanities at the University of Maryland at College Park, noted, some centers that started out with a strong service mentality have found it difficult to "grow out of that," finding that it can compromise their research mission and the kinds of staff they can hire. Dean Rehberger, director of Matrix, The Center for Digital Humanities and Social Sciences at Michigan State University, pointed out that "centers that fail [do so because they] spend a lot of time doing things on campus. . .like speakers' series and supporting faculty. . . . They end up spending up funds that way, rather than working with others, and finding partners. . . . You need to grow the projects first, then find money for them."

"We are not a service center," Rehberger stated, quite clearly. What this means in practical terms, is that he and his team are free to spend their time pursuing and developing innovative research projects, and the partnerships that may result in those projects.

Examples of the service model

At Brown University as on many other campuses, support for digital humanities resources is concentrated in the library. At Indiana University Bloomington, however, the library and the central IT division have an evolving partnership that provides faculty with a range of services and, when needed, connects them to other sites of support on campus.

Profile no. 1
Brown University: Single point of service?

Brown University, described by many as "a research university wrapped around a liberal arts college," has a deep legacy of work in the digital humanities, including some of the earliest work on e-books and hypertext in the 1960s and the Women Writers Project in the 1970s. On one hand, the small-college feel of Brown has made some aspects of support for the digital humanities quite simple there. For many faculty project leaders there is one particular service unit or center that fulfills most if not all of their needs: for researchers this tends to be the library's Center for Digital Scholarship (CDC), though many cited its predecessor, the Scholarly Technology Group. Those working with pedagogical materials often cite the Instructional Technology Group (ITG) that is part of Computing and Information Services. PIs who start at either place tend to rely on that one place for many stages of their project, from early project planning through preservation and dissemination.

One senior administrator noted that "Brown is a place that has been known in this field for a long time and was one of the first places. But I don't get the sense that it's really hot here anymore."

For those faculty with research projects in the humanities, the library has made efforts to identify itself as the starting point, and CDS has recently developed a new navigation for their website, to start to guide faculty who come to them for help. (While this advisory aspect is a core part of the current model in place, the navigation page is essentially a guide to the services that the library offers, and not yet a full guide to all of the DH-related services available on campus.) And indeed, there are several other significant units on campus currently offering training and programming support, including Spacial Structures in the Social Sciences (S4) and the Center for Computation and Visualization (CCV). Even the Italian Department has made efforts to develop a resource for digital projects. The Virtual Humanities Lab, created by professor of Italian studies Massimo Riva, is both project and platform, home to a series of digital projects that benefit from its publishing platform, which includes annotation capabilities.

Innovation in the digital humanities (or, in academic computing) has been a hallmark of Brown as far back as the 1960s, but at some point in the past decade or so this has shifted, and today there is less explicit support from the senior administration concerning the role and significance of digital humanities work. Conversations with the provost, vice provost, and dean of faculty suggested that digital humanities efforts had yet to gain traction as a campus priority. One senior administrator noted that "Brown is a place that has been known in this field for a long time and was one of the first places. But I don't get the sense that it's really hot here anymore."

In part, the often vague definitions that plague the phrase *digital humanities* do not help. One senior administrator stated, "this just hasn't gotten a lot of traction for whatever reason. Maybe it's just that it's become, you know, kind of vague in what it is." Another explained that "like pornography, I know it when I see it. . . . But there are other people who are, you know, still working to understand what that is and what it means."

Without support at the highest levels, it has been difficult to secure institutional funding to expand the library's offerings in this area. A proposal developed in 2013 that outlined plans for a Center of Excellence in Digital Arts and Humanities by "investing in an incrementally executed, sustainable organization and

technical infrastructure that will maximize our strengths, lead to a constellation of even greater excellence and influence, and define Brown both nationally and internationally as a center of excellence in the Digital Arts and Humanities," was not funded, though as of April 2014, the library has succeeded in getting institutional funding to expand its offerings for digital scholars, including a lecture series and an annual week-long "scholar-in-residence" program.

Another [senior administrator at Brown] noted that "like pornography, I know [DH] when I see it . . . . But there are other people who are still working to understand what that is and what that means."

The roundtable held as part of this study did, however, lead to several productive discussions about ways to better maximize Brown's existing resources, by more closely examining overlaps in service delivery. Do teaching tools and research collections need different types of planning and design expertise? Certainly. But does digitization need to take place both in ITG and in the library? Maybe not. In any case, all made clear that their ultimate aim was to support scholars in their work, with support for DH seen as a means, not an end. As one pointed out: "We have to really be thinking about what we need to do to support scholars appropriately in this day and age."

Profile no. 2
Indiana University Bloomington: Experimenting with a "hub" model

Indiana University Bloomington is the flagship, top-tier research campus of the IU system. Due largely to its size, many on campus regard the institution as decentralized, with silos of research activity scattered across the university. Despite this, two major campus units anchor the support offered by the university to digital project leaders and often collaborate with each other on key efforts in this area: the University Information Technology Service (UITS), which provides to all IU faculty and graduate students a baseline of storage space and technical infrastructure that is a foundation scholars can count on for their research as well as consulting for digital projects across all disciplines and direct support for faculty; and the library, which has both initiated and partnered on digitization, text-encoding, and time-based media projects for more than two decades.

Faculty and staff at IU have been engaged with digital humanities projects since 1989, when the Thesaurus Musicarum Latinarum was first conceived by a group of scholars that included IU music professor Thomas J. Mathiesen, who came to serve as the principal on the project. Soon after, in 1993, the IU library joined forces with UITS to establish the Library Electronic Text Resource Service (LETRS), which was, at its most modest level, a helpdesk for researchers working with electronic resources and, at a more grand level, the unit that helped create encoded collections such as the Victorian Women Writers Project in 1995. Since then, library and UITS staff have continued to work together and with faculty to develop projects (e.g., the Chymistry of Isaac Newton with William R. Newman; the Variations digital music library with the School of Music; and other digital libraries related work). These collaborations formed the foundation for the IU Digital Library Program, established in 1997, which was jointly funded and staffed by the IU library, UITS, and the School of Information and Library Science.

In the terms of the 1998 strategic plan he oversaw, McRobbie wants to promote a "philosophy of abundance": "unmetered availability of basic IT services, support, and infrastructure for creative activity, storage, computation, communication, and other activities fundamental to the work of the university.

In the years since, IU's support for digital humanities has expanded in many ways. Professional staff in the library and UITS have developed deep expertise and capacity to support digital humanities research requiring, for example, text encoding, visualization technologies and service, repository development and management, digital imaging and preservation, data curation, video editing and access systems, and open access publishing. Additionally, in 1998, Michael McRobbie, then vice president for information technology and current IU system president helped to develop a strategic plan for the greater University that included the creation of tape-based storage, now called the Scholarly Data Archive, that would be secure and make it possible for all faculty—not just those more generally expected to have storage needs—to rely on University Information Technology Services for long-term hosting. He also ensured that all researchers on campus—explicitly including humanists—were guaranteed access to the hardware and tools needed to perform computational analysis.[32] In the terms of the 1998 strategic plan he oversaw,McRobbie wants to promote a "philosophy of abundance": "unmetered availability of basic IT services, support, and infrastructure for creative activity, storage, computation, communication,

32 Indiana University, "Information Technology Strategic Plan: Architecture for the Twenty-First Century," May 1998, https://scholarworks.iu.edu/dspace/bitstream/handle/2022/6823/IT_Strategic_Plan1998.pdf?sequence=1, p. 9.

and other activities fundamental to the work of the university."[33] There are three key aspects of this support:

- **Storage**, which provides the capacity needed to save research data. All faculty members and graduate students are provided a default 50 terabytes when they sign up for an account in the SDA, which is also the location of the library's digital repository, IU ScholarWorks. But while the data themselves may be safe, some still see a gap with regard to the hosting of web applications.
- **Software and hardware for experimentation** via research gateways (i.e., environments that provide tools for research); the advanced visualization laboratory; and research analytics support. While UITS makes a concerted effort to keep pace with research technologies, "planning" for the obsolescence of these technologies can be challenging for faculty members with long-term projects.
- **Learning technologies** via the Center for Innovative Teaching and Learning, which is currently posted in the library and will help with every aspect of planning and creating teaching resources.

The scale of this support and lack of chargeback is one part of what makes UITS' support offer different from those of other central IT units; an additional distinguishing aspect is the effort by UITS staff to ensure faculty know what they can expect from the organization and conduct regular random surveys of faculty, students, and staff in order to gather feedback from them.[34]

While the development of staff capacity and the core storage and software support are real benefits for faculty, other strategies for creating and nurturing digital scholarly resources have been tested in recent years. The Archives of Traditional Music (ATM) has come to play a significant role in the digitization, storage (on UITS servers), and preservation of time-based media for faculty members. Staff from ATM helped to undertake landscape research that informed a major system-wide project announced in October 2013 by President McRobbie: the Media Digitization and Preservation Initiative, to which McRobbie pledged $15 million to "digitize, preserve, and make available all time-based media objects on all campuses of IU judged important by experts."[35] (The practical effort that will be needed to make this happen is still being defined.) Additionally, in various combinations and through various contributions, the offices of the provost and the vice president for research, the College of Arts and Sciences, the library, UITS have banded together to establish and support two digital scholarship centers (the Institute for Digital Arts and Humanities (IDAH) and the Catapult Center for Computational Analysis and Digital Humanities). Though both IDAH and Catapult grew from successful digital projects themselves, more recently both have tended to focus on training others, rather than continuing to build new projects.

Today, the Digital Library Program has evolved into a library-funded set of services and technologies, and the IU library is close to launching a new effort

33 "Research Technologies—including Advanced Biomedical Information Technology Core—Policy on Conflict Resolution," Indiana University UITS Research Technologies, http://rt.uits.iu.edu/policies/conflict.php.

34 A sample survey is available at: http://www.indiana.edu/~uitssur/.

35 Michael McRobbie, "Looking to the Future: Preparing for Indiana University's Bicentenary," October, 2013, http://pres.iu.edu/speeches/2013/20131001-01.shtml.

to address faculty and student needs, by further integrating digital research into the everyday functions of the library. The library's Scholars' Commons, which has also received support from UITS for more than half of the technology costs, is scheduled to open in prime space on the first floor of the main library in September 2014 and is intended to serve as a central point of service for research queries of all types. According to Diane Dallis, associate dean for library academic services, the Scholars' Commons is expected to help the library reach more people by "raising awareness of the possibilities [in scholarship today] and provide a base level of support for the needs" of those without the resources to pursue, for example, technologically enhanced research.

With a strong focus on digital methods and project support, the Scholars' Commons' staff, which includes reference librarians as well as digitization and technical staff, will provide tiers of services to visitors. Researchers who need assistance with reference questions or who need general technical support and wish to use self-serve digitization machines are considered part of the Scholars' Commons' first tier of service; scholars who want to build projects or use tools but need basic consultation on techniques and methods or those who want access to higher-end digitization equipment are in the second tier of service; the third tier of service, which has not been fully defined, will be for longer-term projects that require more ongoing and in-depth consultation and advanced training; finally, the tier four engagements—also not yet fully defined—"would be grant-funded collaborations or libraries assuming the role of a research partner for 'one of a kind' projects."[36]

The Scholars' Commons also aims to extend services available to researchers by providing coordination and synchronization of service-providers around campus by bringing together campus partners who support research and scholarship. Although the Commons will be housed in the library, another aspect of its role is to serve as more of a hub for scholars seeking access to other units on the campus map, such as IDAH, Catapult, the Social Science Research Commons, and UITS's Research Technologies division. These other units may well be better suited to address faculty research needs and, depending on their capacities, to incubate or collaborate more extensively on projects.

Time will tell whether the library's new approach to assisting digital scholarship—one still firmly rooted in service, but intentionally shifting away from intensive development for boutique projects toward scalable support ranging from general reference and directional help to advanced training—will be successful.

36 Angela Courtney, "Scholars' Commons Tiers of Service," draft, 2013, on file in the office of Angela Courtney.

The lab model

There are well-known examples of the "laboratory" model, including Scholar's Lab at the University of Virginia, the Roy Rosenzweig Center for History and New Media (RRCHNM) at George Mason University, the Maryland Institute for Technology in the Humanities (MITH) at the University of Maryland, and Matrix: The Center for Digital Humanities and Social Sciences at Michigan State University, and they are often held out as models for other campuses to emulate. These labs represent a robust cycle of support, fueled by innovative projects and the grant funding they attract.[37] This recognition is well deserved, and the model of the laboratory is an interesting one to consider, though in the cases we observed, the digital humanities lab or center tends to be just one part of an institution's strategy, not the entire solution.

Many have pointed out the futility in trying to characterize DH-center or lab models, as "no two are alike." Indeed, DH centers and labs tend to have a specific focus, tied either to the mission of the campus or to the aims of their founders, which necessarily means that many do not take on responsibility for digital projects that fall outside of the scope they have defined.

That said, there is a certain class of DH center that attracts attention for a focus on innovation and project development, and is markedly different in intent and organization from the more service-oriented approaches. If the service model primarily aims to help the faculty on campus learn about DH methods, foster campus-wide discussion on the topic, encourage discussions and roundtables, and build, this is clearly not the case for the lab model.

Strengths of the lab model

The benefits of a lab model are in the focus it permits the leaders and project managers to have in conceiving and pursuing digital projects. In addition, the entrepreneurial aspect of running a lab means that if it can secure the funding, it can grow, bringing on staff with skills suited to the projects. While project leaders know how difficult it is to attract and keep strong programmers and tech managers, there are examples of centers that are large enough, with several significant funded projects, to support technical staff—albeit on a web of overlapping grant funding—over time, and this has its own benefits. "The individuals who work on these projects have been around and continue to be around. So there is a kind of personal commitment to these things," said Tom Scheinfeldt, while still director-at-large at RRCHNM. (Scheinfeldt qualified this by noting that RRCHNM now has a new director who may have a different vision.) Some of the best-established centers have real ownership of the projects they conceive and build, and these are among the very few examples of shops that devote significant time to nurturing and building the audiences for their projects, through strategic intentional outreach.

37 According to centerNet, an "international network of digital humanities centers," there are currently more than 175 such centers throughout the world. For recent reports on the position of these centers in the DH-support landscape, see Bryson et al., *Digital Humanities: SPEC Kit 326*, which discusses the relationship between these centers and academic libraries; and Schaffner and Erway, *Does Every Research Center Need a Digital Humanities Center?*. Examples of centers that grew up around faculty projects are RRCHNM (around the late Roy Rosenzweig's many digital initiatives) and Stanford University's Center for Spatial and Textual Analysis (principally around Zephyr Frank's Spatial History Project [formerly also with Richard White] and Franco Moretti's Literary Lab).

At RRCHNM, outreach plans begin to take shape in the grant proposal. Specific audiences are targeted, and a member of the project team is tapped to be the outreach lead. According to Sheila Brennan, associate director of public projects, the first step in building audience involves assessing their needs: "In some cases, we survey our potential audiences to see if there truly is a need for the project or tool we are building. We did that with Omeka before applying to and receiving funding from IMLS. Then, we periodically surveyed our users to see if we were meeting their expectations and if there were ways we could improve the software."

As a project takes shape and goes public, the team gears its outreach to specific audiences, whether scholars, teachers or museum professionals, and tracks the response through webstats and social media. Keeping an eye on who is using the project may sometimes reveal that unexpected audiences are showing interest in the resource, encouraging the team to revise its outreach strategy and carefully tailor it to those new users as well. For legacy projects, a designated point-person person to handle outreach, including promoting its content, particularly at strategic times in the year (e.g., the beginning of the school year, around specific anniversaries). As Brennan put it, "It all just fits into the work that person is already doing."

Being on soft money "forces us to stay on our toes," according to one director. While he feels the model is sustainable, "you can't be complacent."

Drawbacks of the lab model

The Roy Rosenzweig Center for History and New Media at George Mason has a clear mandate to focus on public history resources, and it only rarely serves—and even then, typically just by consultation—other digital project leaders on campus. "The vast majority of projects [we work on] have no George Mason connection beyond the Center. . . . We just don't end up helping other faculty members all that much because we're grant funded and we don't have the bandwidth to work with other faculty members and help them along to try to seed projects, develop projects. . . . Much more frequently, we're coming up with ideas in the Center and pursuing them on our own," according to Scheinfeldt.

This selective focus is not necessarily a weakness, but it is a trade-off. The lab model outlined here derives real benefit by building external partnerships and attracting outside funding, allowing the lab to grow and develop. But doing this is extremely difficult and requires a very clear focus. Being on soft money "forces us to stay on our toes," according to one director. While he feels the model is sustainable, "you can't be complacent." Dean Rehberger, director at Matrix, concurred. "We struggle day to day," he said, and his center has only achieved success after working at it for years. "It takes a long time; you must be adaptive. We've changed our model" over time, he noted, working hard to cultivate new partners and new projects.

Finally, though the lab model holds out the promise of building larger, stable teams of project managers, programmers, and marketing specialists, determining how to manage legacy projects is still very much a matter of debate. Unlike libraries, centers may be more likely to define success in terms of current usage and impact, or ability to generate grant funding. Ray Siemens, Canada Research Chair in Humanities Computing at the University of Victoria, described having to make a difficult decision: "A few years ago, the needs of one of our legacy projects were so considerable — simply to be sustained in steady-state and served in the environment— that it was inhibiting our ability to support any new research.

When we realized that, we had to make a serious decision about our role and mandate . . . and we had to cut most of our 'sustenance' types of work because we didn't ourselves have the resources to move forward, with our research, and backward, sustaining the larger legacy of that research, at the same time." To resolve this, they set up a policy to work with projects for a set amount of time; anything beyond that would be the responsibility of the researcher in the context of the institution and its repository. Another center director encountered much the same situation, coming to the conclusion that "we can't host projects for the long term. It's just not practical for us; I am not sure this would be the best use of our resources." In other words, while the lab model is quite effective for spurring innovation and even building capacity for new work, even the most successful labs cannot absorb the costs of long-term hosting and support.

Examples of the lab model

George Mason University's Roy Rosenzweig Center for History and New Media works almost exclusively on projects that are conceived, developed, and sustained internally by project leaders who are either part of the center or close partners from outside the university. At Stanford University's Center for Spatial and Textual Analysis, faculty members and graduate students on campus who are interested in pursuing in-depth projects can collaborate with the center's staff and use its workspaces.

Another center director encountered much the same situation, coming to the conclusion that "we can't host projects for the long term. It's just not practical for us; I am not sure this would be the best use of our resources."

Roy Rosenzweig Center for History and New Media (RRCHNM) at George Mason University

RRCHNM was founded in late 1994 by the late Roy Rosenzweig, who was a professor of history and a long-term director of CD-ROM and other technology-based projects. For six years, Rosenzweig and an occasional graduate student assistant were the only staff members of RRCHNM, but in 2000, major funding from the Sloan Foundation put them in a position to broaden their base of support. More staff meant that they were later able to apply for grants for more projects, and over the past decade, RRCHNM has grown to about 25 full-time employees, who are largely supported (between 80% and 90%) by soft money. Almost all of RRCHNM's projects are initiated by staff, although a small fraction of their work is developed with collaborators on other campuses. It is rare that the Center works with GMU faculty who are not already affiliated with the Center or bringing grant money into RRCHNM; those project leaders must work with the Center's staff to write a grant or turn elsewhere for assistance.

The Center for Spatial and Textual Analysis (CESTA) at Stanford University

Since 2000, project leader and professor of history Zephyr Frank has used a combination of campus research funds and a monetary gift awarded to a former collaborator to create and foster his Spatial History Project. As these institutional and gift funds began to run out, Frank convinced the leaders of two other similar DH projects on his campus to join forces with him and appeal to the dean for research to support a Center for Spatial and Textual Analysis, believing there would be strength—as well as the possibility of greater efficiency—in numbers. Frank's case was successful, and CESTA now has its own staff that shares

expertise and an open workspace and can apply for shared grants and train students in DH research techniques. Because the focus of the Center is so specific, CESTA works principally on long-term projects and does not play the role of a service unit to other Stanford faculty interested in DH. More of the one-off inquiries and consultations take place in the library where, "Michael Keller, university librarian, has put in place a program to help individual faculty whose research involves textual analysis and other digital methods," according to Ann M. Arvin, dean for research.

The network model

Both the service model and lab model tend to assume that one specific unit on campus, whether the library, the IT department, or a digital humanities center, will take the lead in setting up systems for whatever sharing, service provision, and standards will be adopted by digital projects. Perhaps much more common is the scenario we observed on many campuses, where there are multiple units whose services have developed over time, in the library and IT departments, but also visualization labs, centers in museums, and instructional technology groups, each of which was formed to meet a specific need. Given the actual landscape on many campuses, it might seem that a strong system of end-to-end support would find a way to weave together the infrastructural and human capacity from these many players. This "network" approach might have a strong hub at its center, like a library or a DH center, and many nodes supplying specialist support as needed. Or, it might consist of an array of various units, none of them dominant, simply pooling resources across campus to piece together a path for potential PIs.

Potential strengths of the network model

This model seems to hold real promise, and many interviewees suggested it was their ideal, but, perhaps more than the others, it requires buy-in from these various units, and without strong direction it can easily falter. In one case, a vice provost outlined a plan to draw together resources scattered throughout the campus, a means to efficiently maximize the impact, without additional new investment. Given the strained finances of many institutions, drawing together existing resources can seem like a pragmatic step, before making heavier investments in new programs or positions.

Potential drawbacks of the network model

It is difficult to point to drawbacks of the model in action, in part because we did not observe any campuses on which a network model had been fully implemented. Ironically, perhaps, without strong leadership dictating how the units will work together, and systems for rationalizing the staff capacity each has, it is far easier for independent units to simply keep working independently.

Examples of the network model

Although the heart of activity and attention for digital humanities scholarship on campuses with DH units is often at those centers and labs themselves, there are efforts to build a wider net of support—sometimes by slowly linking just two units at a time—in order to better help researchers not affiliated with DH units. At the University of Wisconsin at Madison, a grassroots effort by faculty and some

staff has led to the construction of a network out of various pockets of support around campus and has grabbed the attention of some senior administrators who may be able to help reinforce that network. At Columbia, the pockets of support are largely concentrated in the library, though in different units that occasionally work together to develop and manage projects, but are nevertheless independent from one another.

Profile no. 3
University of Wisconsin at Madison: Can a network model work?

UW–Madison is a decentralized institution, with services housed in silos across campus. Not only is the support of the Division of Information Technology (DoIT) devolved to the college and sometimes departmental level, but many services available to faculty members are charged back, requiring faculty members seeking assistance for digital projects to be both entrepreneurial and opportunistic in order to obtain the support they need.

In 2009, Professor Jon McKenzie led a faculty development seminar sponsored by the Center for the Humanities and the Institute for Research in the Humanities, during which participants discussed and helped to revise a white paper he had written entitled "Enhancing Digital Humanities at UW–Madison." The paper, which was soon submitted to the chancellor of the university, pointed to dispersed pockets of DH activity on campus and made recommendations aimed at academics, the library, and IT services, with the goal of turning UW–Madison into "a world leader in digital arts and humanities by assembling a Digital Arts and Humanities Network comprised of UW faculty, academic staff, and students, as well as librarians, technologists, and administrative staff, all supported by a robust IT infrastructure."[38]

Although networks offer several advantages, the structural robustness of any network is challenged when key nodes are changed.

This appeal was taken seriously by administrators, especially the office of the chief information officer and vice provost for information technology, which worked with McKenzie and Lee Konrad, associate university librarian for technology strategies and data services, to develop Charter 6.6: Digital Humanities, a strategic initiative to "advance and sustain digital arts and humanities research and teaching."[39] In this document, over a dozen "strategies/actions to advance this initiative" were listed, sometimes drawing on resources (e.g., the library's Digital Collections staff and the Media Studio), partnerships (e.g., Project Bamboo, the Working Group for Digital Inquiry), and digital scholarship energy (e.g., at the Morgridge Institute for Research) already established at UW–Madison and supported by the campus. In parallel, the university demonstrated its support for the network in several prominent ways: by continuing to invest in these "nodes" of the nascent digital scholarship network (space for the Working Group in the library; staff from the library and DoIT to work on Project Bamboo; the Media Studio itself as a support unit); by accepting the proposal mentioned in the Charter to create an undergraduate certificate program in Digital Studies;[40] and by assuming responsibility for the most visible DH research project on campus, Visualizing English Print, initially funded for $1.5 million over three years.[41]

Although networks offer several advantages, the structural robustness of any network is challenged when key nodes are changed. In the few years following the white paper and the Charter, there was "tremendous high-level turnover,"

38 Jon McKenzie, et al., "Enhancing Digital Humanities at UW–Madison: A White Paper," Digital Humanities Initiative, University of Wisconsin–Madison, http://dighum.wisc.edu/FDS_White_Paper.pdf, p. 1.

39 "UW–Madison IT Charter 6.6: Digital Humanities," Office of the CIO and Vice Provost for Information Technology, University of Wisconsin–Madison, http://www.cio.wisc.edu/plan-docs-Charter6-6.aspx.

40 Digital Studies, University of Wisconsin–Madison, http://digitalstudies.wisc.edu/.

41 Visualizing English Print: Textual Analysis of the Printed Record, http://graphics.cs.wisc.edu/VEPsite/.

according to Konrad. Some activities and plans paused as leaders left and new leadership came in. While there was no intention to diminish support for DH activities, there was a loss of momentum that is common in times of significant change, whether those changes be with respect to changes in leadership, resource constraints, institutional priorities, or even the global economy. Plans for designated DH space were put on hold, and a key point of contact on campus, professor of English Michael Witmore, left to direct the Folger Shakespeare Library; members of Witmore's Working Group for Digital Inquiry and many in the broader DH community on campus have certainly felt his absence.

The remaining champions of DH on campus today are working diligently to rebuild these connections, and the library has contributed by creating the position of a de facto digital scholarship coordinator, currently held by Carrie Roy, who works with faculty members on projects and helps them form relationships with other scholars and with campus units that might be able to support them. Roy also collaborates with faculty at the successor to the Morgridge Institute for Research, the Wisconsin Institutes for Discovery, and runs the Humanities Research Bridge, made up of DH-interested faculty, students, and staff. At the campus roundtable held at Madison as part of this study, discussion with the library director, CIO, and others suggested that a recent successful online learning initiative adopted by the provost's advisory group comprising all ten UW vice provosts might provide a new path for deeper cooperation and coordination among what have until now been nodes operating perhaps too independently of one another.

Having support from the top will be vital for this network system to have a chance to succeed, but even so, while some participants in the roundtable felt that a real partnership of equals would be ideal, others felt sure that "someone will have to lead" if the system is to gain any traction. It will be interesting to see, given the strengths inherent in the UW model, how a network, with no one central hub, will be able to offer the flexibility its stakeholders crave, with the stability and leadership the initiative may require.

As Michael Witmore pointed out, "institutional support creates legitimacy, but…it's going to be work with other people that's going to keep [digital humanities] alive." For a grassroots network like this one to take shape, and for its nodes—however well supported by the institution—to remain linked, there must be individuals at each point who commit to sustaining and fostering those connections. "The only way these projects take off is if people have personal relationships with their collaborators," Witmore underscored.

Profile no. 4
Columbia University: Coordinating support within the library

Columbia University has a long history of engagement with the digital humanities, from the early days of humanities computing, to more recent and well-known forays into innovative ways to put content and courses online, through such initiatives as Gutenberg-e, Columbia International Affairs Online, and others. Today, Columbia boasts no fewer than four units deeply engaged in different aspects of digital humanities work, all of them located within the organization of the Columbia University Libraries: the Digital Humanities Center, the Libraries Digital Program Division (LDPD), the Columbia Center for New Media Teaching and Learning (CCNMTL), and the Center for Digital Research and Scholarship (CDRS).[42]

While each unit has developed for specific reasons and according to its own internal logic, the four tend to see themselves as collaborators, though that collaboration is often more advisory than operational. The main units tend to be characterized by their leaders as having distinct missions: CCNMTL handles projects with a pedagogical focus; LDPD focuses on digitization of library-owned collections; CDRS's specialty is managing the institutional repository, called Academic Commons, and supporting faculty and student online journal-related projects. The Digital Humanities Center is a "research and instructional facility of the Columbia University Libraries designed to help Columbia faculty and students incorporate computer-based textual, bibliographic, image, and video information."[43] Under the leadership of Barbara Rockenbach, director of the History and Humanities Library, the Center includes Digital Humanities Librarian Bob Scott, and in 2012 it hired Alex Gil to serve as digital scholarship coordinator, a partner to faculty seeking to develop digital projects, and a nod to University Librarian Jim Neal's belief that bringing in nonlibrary staff where outside expertise is needed is a critical step for libraries.[44] The unit created the Studio@Butler in partnership with the Graduate School as a space to host further trainings and invite experimentation with new methods and tools.[45] This is a new direction for the unit, as it tries to expand its role from offering consultation to becoming a more active partner in projects, and the hub of DH activity on campus.

Indeed, rather than carve out different pieces of the digital lifecycle, each unit tends to work with projects from concept to completion, carrying out planning, data creation, and website support and design. This "vertical" logic is understood

42 According to an internal memo from Barbara Rockenbach entitled "Digital Humanities at Columbia: Past, Present and Future" (March 2014), "LDPD was created in 2002 to further three important areas for digital scholarship: collections-based digitization, long-term digital preservation of research content, and the Libraries' web presence. Since 1999, CCNMTL has partnered with faculty to enhance teaching and learning through the purposeful use of new media and technology in the classroom. CCNMTL efforts range from basic course website management to the development of complex digital tools designed to enrich teaching in humanities courses. CDRS, created in 2007, works with scholars to increase the utility and impact of their research and scholarship through the innovative application of digital tools and publishing platforms. CDRS collaborates regularly with DHC staff in support of digital projects in the humanities." For a listing of LDPD projects, see http://library.columbia.edu/find/digital-collections.html; for CCNMTL, see http://ccnmtl.columbia.edu/portfolio/; and for CDRS, see http://cdrs.columbia.edu/cdrsmain/projects/.

43 Digital Humanities Center, http://library.columbia.edu/locations/dhc.html.

44 James G. Neal, "Raised by Wolves: The New Generation of Feral Professionals in the Academic Library," February 15, 2006, http://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/pdf/neal2-05.pdf.

45 See Studio@Butler: A Collaboratory for Educators, Scholars, and Librarians, at https://studio.cul.columbia.edu/.

and accepted by directors of the units, though one library staff member commented, "The challenge still is—it's only now beginning to change—that those [units, CDRS, CCNMTL] have been silos in some ways." In part, this independence may have deep roots, grounded in Columbia's administrative culture and governance practices. According to Damon Jaggars, associate university librarian for collections and services, "This is one of those universities where there's not really a center, and I mean that in the broadest, grandest sense. . . . This is very much an 'every tub on its own bottom' type of institution." Some administrators feel this can pose real challenges in developing campus-wide strategies. According to Carlos Alonso, dean of the Graduate School of Arts and Sciences, the decentralization stems from financial requirements that each school support itself, but this can lead to a sense of competition. There is "no central university institutional setting of priorities," according to Alonso. "Even within Morningside, it is still very atomized . . . and deans are not shy about exempting the school from requests or requirements that the provost likes to float."

But it is not clear that the logic of four separate, autonomous units adds up to a single coherent strategy for faculty members, or an overarching plan for how to manage the digital projects they create. Interviews on campus suggested that Columbia faculty sometimes had to visit a few places (or were referred from one to another) when developing new projects. Some faculty underlined that they had very good working relationships with specific people ("I think of myself as working with Bob Scott, not with the 'Digital Humanities Center,'" said one), but as another pointed out, "few faculty are aware of the relationship between and mandates of the various shops, and there is a strong sense that the place of each of them within the library system is not particularly well defined."

Rockenbach and her colleagues are looking for ways to maximize the impact of these units, by thinking about a more coordinated strategy. "Right now, we are really hitting up against all the huge questions," says Rockenbach. "We're trying to take a lot of one-off initiatives and make them into services. . . . We have not fully operationalized DH here yet." She says that she and her colleagues, recognizing that Columbia may not yet be a leader in DH, are asking themselves, 'How can we carve out a niche? . . . We're not going to be RRCHNM, we're not going to build tools. We know that our primary audience is going to be faculty and students here at Columbia." Two areas that emerged for future investment were working with graduate students and "training of librarians. We've really tried to focus a lot on the Developing Librarian Project,[46] and how we can put librarians at the core of digital humanities efforts rather than on the periphery."

Each of the units has particular strengths, however, that might be leveraged and articulated in a campus-wide strategy. Below are some areas staff in these units are thinking about when considering how to anticipate and support needs of scholars in developing and supporting digital projects over time:

- **Involvement at the planning stages.** There is currently no obligation for faculty developing digital projects to consult with any one unit, though proposals for external funding do go through the Sponsored Projects Administration (SPA). This has made it possible for CDRS, for example, to learn which NSF-funded

46 See Breaking the Code: The Developing Librarian Project, at http://www.developinglibrarian.org/.

proposals have data management plans. But that notification has so far been taking place after the grant has been submitted, not before, and only holds for NSF grantees. Having the DHC and/or CDRS involved in planning and grant writing for projects with any digital sustainability issues would permit staff in those units to better manage capacity, and would help to shape projects at earlier stages. As Jaggars and others pointed out, "If a project is built in a particular way, where it actually isn't compatible with our infrastructures, there's a lot of rewriting that has to be done to make sure that we can preserve it across time."

- **Deciding who to support.** The processes for faculty to obtain support in general has been described as "clientelistic." As one senior administrator described it, support may sometimes rely "on the basis of a previous relationship . . . and my willingness to put some funds behind the thing. Columbia is an incredibly decentralized place . . . and it's almost like to launch anything requires that kind of persistence of just going from office to office and getting $5,000 here and $10,000 there." This is not a good thing; it has tended to mean that staff time may be devoted to projects in a somewhat ad hoc way, and faculty end up working with the units that agree to take them on. An exception to this is CCNMTL, which has for years used an intake form to assess potential new projects whose originators would like to work with them. Would a standard, group-wide intake process help ensure that projects end up in the units best suited to support them in development and for the long term?
- **Developing a logic of "ownership"** and clearly defined goals and stages. Some units have realized the value of deep partnerships. Maurice Matiz, co-founder of CCNMTL, has described the close partnerships that his staff have with the faculty and projects they choose to take on: "We see ourselves as a very intimate and integral partner with the faculty in building whatever we build. . . . A lot of times we take extra steps, even if the faculty member is no longer here." Rob Cartolano, associate vice president, Digital Programs and Technology Services, has started thinking about how "ownership" terms can be more clearly defined, as well. As a way to clearly define whose responsibility ongoing work and support will be, he considers digital outputs as either "faculty owned" or "library managed." "My feeling is you have to have an exit strategy at the end of these things, and you have to have a clear path forward. Either A, it goes back to the faculty member when you're done and it's their responsibility to sustain it. Or [B], it goes back to the organization, in this case the library information services organization, and we sustain it. It's either one or the other."
- **Deciding what to do at scale and what needs to be customized.** As Cartolano pointed out, the balance between scale solutions and customization is difficult: "Cultural organizations who have been used to having full control over a particular set of services . . . feel like it's inherently their responsibility. . . . The challenge is [accommodating] the independent thinking, entrepreneurialism, which are the heart of creative efforts of researchers and scholars. . . . Sometimes [they] buck against any type of shackle or perceived shackle." "When can you work at scale and when can't you is a key question." The libraries are moving to standard interfaces for digital projects as much as possible, according to Jaggars. They plan to use "the Blacklight interface, and we'll be serving digital projects, unless we really need [a custom] interface

on a particular project, through the platform Blacklight offers. . . . So the splash page may look different, but, in the end, it's the same infrastructure sitting underneath it."

- **Getting the word out that the library (and its units) do this work.** While the library houses almost all of the units involved in the stages of creating and supporting digital research outputs, some faculty are unclear about just which units are there and which they ought to seek out. Said one, "This is a communications problem, but also a governance problem: The library doesn't do a good job explaining, but the faculty has not been in a position to force/encourage it to explain." One administrator felt that this compartmentalization without communication might be having adverse effects; he cited one unit that felt their mission was to serve the entire university, but did not have the profile "they should have, to the larger university community. . . I would venture to say that they're vastly underused."

Going forward, clearly there are some major decisions still to be made, and the library leadership understands the fine line they walk. As Cartolano has said, "This is a very careful balance for the university . . . how you maintain the dynamic, the creativity, the exploration . . . the deep effort required to do something different and [also] provide infrastructure and services for a very large complex research university with hundreds of academic departments and thousands of individual researchers." To do that, the key questions they will be trying to answer revolve around researchers: "What are the things that are universal values that we as a university provide that make the researcher's life easier?"

Costs, Ownership, and Value

Who pays for that, and who should?

While many campuses are providing project storage and even some measure of preservation through the library repository and/or central IT services, the larger, more complex digital resources that faculty are creating for an audience beyond themselves and their students typically need ongoing attention that reaches beyond storage and preservation. In order to stay alive, they need sustained audience engagement, and in order to sustain user engagement, they need to be kept useful and useable for that audience. As the director of UVA's Scholars' Lab, Bethany Nowviskie, has written:

> We must develop digitization standards and best practices with an eye not just toward archival integrity and long-term preservation, but toward the provision of persistent, ready access for our users. . . . We're smartest when we ready these objects, not only for long-term use, but always for near-term use. . . . In contrast to physical documents and artifacts, where the best-preserved specimens are the ones that time and good housekeeping forgot, the more a digital object is handled and manipulated and shared and even kicked around, the longer it will endure. The harder they work, the longer they last.[47]

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The cost of creating new digital projects in higher education is often underwritten by granting agencies and private foundations, and for large-scale projects this is still the case, though many institutions have started to find ways to fund some creation on their own.[48] And to the extent that there is still some external funding available for new and innovative projects, such funding is notoriously unavailable for their ongoing support.

The costs of digital resources are entirely dependent on the scale and ambition of the project, and yet there are several common categories of costs among resources of similar size, such as content or software creation, storage, and preservation.[49] The project leader's expectations for her resource play the determining role in the costs that will be associated with that resource during its creation and, if required, its ongoing support. For instance, the costs incurred by a short-term text-mining experiment on an existing set of materials undertaken for the researcher alone may be not much more than the researcher's time. The major digital humanities projects we have all heard of have been beneficiaries of multiple rounds of grant funding over several years, often totaling many hundreds of thousands of dollars.

47 Bethany Nowviskie, "Reality Bytes," 20 June 2012 blog post, http://nowviskie.org/2012/reality-bytes/.

48 In a recent survey of members of the Association of Research Libraries, most respondents indicated that they contribute both to the up-front and ongoing support of digitized collections. In addition, they reported on average that their contributions comprised 70% of the total up-front costs for creating new works and 90% of the ongoing costs to support existing works in a given year. Maron and Pickle, *Appraising Our Digital Investment*. See full set of data slides, question #22, at http://www.sr.ithaka.org/sites/default/files/reports/digitized-special-collections-report-slides-15feb13.pdf.

49 Many institutions in the cultural heritage sector have tried to develop schema that can help their staff estimate costs up front. See, for example, Karim Boughida et al., "Cost Forecasting Model for New Digitization Projects," *CNI: Coalition for Networked Information*, accessed February 13, 2014, http://www.cni.org/topics/digital-libraries/cost-forecasting-model/; and Lisa L. Crane, "Cost Factors in Digital Projects: A Model Useful in Other Applications," in C. Smallwood, ed., *The Frugal Librarian: Thriving in Tough Economic Times* (Chicago: American Library Association, 2011), 134-44; accessed at http://scholarship.claremont.edu/library_staff/1.

William Newman's The Chymistry of Isaac Newton project at Indiana University received multiple substantial grants from the National Science Foundation as well as the National Endowment for the Humanities, totaling more than $1.5 million over nine years.[50] Newman's available funds have fallen sharply with the conclusion of his most recent national grant; he now relies entirely on a small amount offered by IU's College of Arts and Sciences.

Once the resource is launched, the costs do not end. Even for projects whose content is no longer being updated, major expenses can be incurred. For example, Valley of the Shadow, a project originally created by historian Edward L. Ayers in the 1990s, "took 14 years to build, and there's probably a million dollars in it," according to Ayres in a recent article in the *Chronicle of Higher Education*. Yet, as technology formats evolved over time, the project required a substantial upgrade. Bradley Daigle, director of digital curation services at the University of Virginia Library, explained that they "basically swapped out all the parts and rebuilt the engine," work that took two years, with the help of a $100,000 grant from the university and three full-time employees.[51]

When faculty PIs complete their projects, support units on campuses rarely have the money (i.e., staff time)—or perhaps do not feel that it is within their scope of service—to provide ongoing help beyond storage and preservation, which is considered a matter of safeguarding the scholarly record. And once again, the funding question—who should pay—circles back to the fundamental mission question: that is, why colleges and universities chose to be involved with humanities projects in ways and to extents that they rarely were before the digital transition.

As the authors of the Blue Ribbon Task Force on Economic Sustainability pointed out in 2010, there are real challenges to identifying the locus of ownership on this question:

> Economic analysis of digital preservation of these materials reveals structural challenges that affect all digital preservation strategies: (1) long time horizons, (2) diffused stakeholders, (3) misaligned or weak incentives, and (4) lack of clarity about roles and responsibilities among stakeholders.[52]

Ownership and responsibility

At the outset of a grant, one's institution takes on certain responsibilities: for properly managing the spending of the grant, perhaps for contributing a certain percentage of matching funding, and for complying otherwise with the terms of the grant. More and more, funders are writing in requirements for long-term and freely available access to research outputs.[53]

50 The Chymistry of Isaac Newton is available at http://webapp1.dlib.indiana.edu/newton/.

51 Jennifer Howard, "Born Digital, Projects Need Attention to Survive," *Chronicle of Higher Education*, 6 January 2014, http://chronicle.com/article/Born-Digital-Projects-Need/143799/.

52 Blue Ribbon Task Force, *Sustainable Economics for a Digital Planet: Ensuring Long-term Access to Digital Information*, February 2010, http://brtf.sdsc.edu/biblio/BRTF_Final_Report.pdf, p. 1.

53 Jisc's e-Content grant program at one time included requirements for institutions to pledge to support digital outputs for a minimum of five years. See Maron and Loy *Funding for Sustainablity* (2011).

Though faculty project leaders often provide the public face of the project and are often the ones devoting the most time to building and maintaining it, who actually owns it? And does responsibility for long-term support come with ownership?

The faculty or staff member who creates a project "owns" it, in a sense. Just as scholars retains ownership of the scholarly articles and books they write, faculty members may own—that is, hold copyright to—the intellectual content of the digital works they create. And yet, complex digital projects raise complex challenges. Some may include a range of materials for which special permissions have had to be secured. Being certain that one has the needed permissions to digitize, use, and share materials is a critical early step in assuring the long-term viability of a project, though only a lucky few campuses may have staff dedicated to offering advice to faculty on rights and permissions.

Assuming all necessary rights have been cleared, the investments a university makes in a project can have implications for ownership. The act of building a digital humanities project often takes a village, or at least a great deal of in-kind contribution from sources throughout the university, from the time of librarians in project planning, grant writing, and metadata set up, to time from programmers to develop the interface and discovery functionality; and internal grants may have been obtained through a department, or a dean or provost's office and used as start-up funds or continuation funds along the way. Depending on the degree to which a university can claim to have invested its resources in the building and maintenance of a digital project, it can claim ownership.

The investments a university makes in a project can have implications for ownership.

This sort of legal ownership tends to be defined, to the extent that it is at all, through the lens of copyright. For example, in the excerpt below, in which the Columbia Copyright Office defines the right of the university to exercise ownership, the italicized passage can certainly be applied to a digital humanities project insofar as it has benefited from in-kind university support, whether from the library or elsewhere:

> By longstanding custom, faculty members hold copyright for books, monographs, articles, and similar works as delineated in the policy statement, whether distributed in print or electronically. This pattern will not change. This copyright policy retains and reasserts those rights.
>
> The use of new media technologies has changed the process of creation of intellectual works. Some of the resources (physical, financial, and human) needed to employ the new technologies are shared resources, provided by the University for the common benefit of all members of the University community. But, in many cases, the use of new media technologies requires increased involvement by the University in the form of financial support, expert services, equipment, and other facilities beyond the base level of support and common resources provided to faculty.
>
> Columbia will hold rights in copyright to works of authorship that are created at the University by faculty, research staff, and others and *that are supported by a direct allocation of University funds, are commissioned by the University, make substantial use of financial or logistical support from the*

University beyond the level of common resources provided to faculty, or are otherwise subject to contractual obligations.[54]

Still, while the university may claim copyright to major digital projects that it has supported financially or logistically, the spirit of copyright law mainly supports the university's right to exploit such projects in ways beneficial to the university (comparable to the way the university may benefit from patents for processes or products developed by its researchers, for example). And having the right to exercise this kind of ownership of a project is not at all the same as having an obligation or responsibility to support or maintain the project. According to Kenneth Crews, director of Columbia's Copyright Advisory Office from 2008 to 2014 and currently an attorney in practice in Los Angeles, "One of the great privileges of being the copyright owner is to do nothing. That's one of your privileges."

Further, according to Crews, most universities simply choose not to exert their ownership rights. Unless there is "somebody there [at the university] who really desires to run that project. . . . [More] typically I would expect a university to wish their faculty colleague well."

The key value of the research and teaching content and tools is often less in the files themselves than in what they make possible in the classroom or in the scholarship of their creators.

What is the value of what they are building?

The truth is, many DH project leaders do not sufficiently measure or strategize to increase the impact of their work. The key value of the research and teaching content and tools is often less in the files themselves than in what they make possible in the classroom or in the scholarship of their creators. Their impact is measured by the number of students they reach, the success of that engagement, or what they are able to publish as a result of having those materials. Though teaching and research tools especially may have the potential to reach beyond the individual classroom or office, the ambitions of their project leaders are generally more limited, and thus it is rare that they expect or ask for more support for their resources from their campuses than what they need to build and store them.

The larger public-facing initiatives, however, tend to have much grander ambitions and thus potentially confer significant prestige on their institutions. Lantern, for instance, which is a platform to search the Media History Digital Library, has the potential to reach well beyond Madison, Wisconsin, to anyone interested in the history of film, broadcasting, and recorded sound. Project leader Eric Hoyt explained that he tracks the usage of Lantern using Google Analytics in order to quantify that impact, noting that, between its launch in summer 2013 and November 2013 (at the time of the UW campus survey), his resource had 34,858 unique visitors; it now has about 500 visitors per day who spend an average of 7 minutes 48 seconds per visit to the site. RRCHNM's bibliographic management tool Zotero has over 1.5 million users who sync their accounts to their servers, more than 140,000 user groups, and around 270 million bibliographic items. These resources also demonstrate their value in the form of download numbers (almost 100,000 since launching in 2008 for RRCHNM's Omeka web publishing tool) and accounts created (over 1,000 accounts activated for the Ethnographic Video for Instruction and Analysis Digital Archive, not including

54 Preamble to the Columbia University Copyright Policy, Columbia University Office of the Provost, http://www.columbia.edu/cu/provost/docs/copyright.html.

the 30 institutions with automatic account activation). Most digital project leaders, whether faculty or library staff, do not regularly assess such statistics. Indeed, only one in five creators or managers of digital projects who responded to the campus surveys indicated that they regularly track impact metrics.

Success Factors and Examples of Good Practice

Though each university or college will need to determine what motivators will drive the design of its own plan, there do seem to be a number of factors that can help establish a coherent system for supporting the creation and long-term sustainability of faculty initiatives. The following are common themes that emerged through conversations with digital project leaders, administrators, and staff at libraries, IT units, digital humanities centers, and others engaged in considering campus-wide approaches to creating and supporting digital humanities initiatives.

To set the stage for digital humanities creation.

1. **Clarify the end goal.**

There is no right or wrong definition of what constitutes digital humanities, but confusion about institutional aims can result in digital humanities centers or systems that do not suit the purposes for which they were supposedly created. For example, a stance of "we will provide faculty with the tools they need to experiment with and learn new methods" could lead to a set of activities that includes offering faculty storage space, access to programmers' time, and a range of tools to use. It may privilege the act of experimentation over the need to sustain any particular output. On the other hand, some institutions may place more value on the careful structuring and creation of content and data, a selection and curation function that is meant to support DH-related outputs for the long term. This model may require more regulation around the selection of projects to support and the structuring of the data they hold. Many campuses, particularly those whose faculty may not yet be building large-scale digital research projects, may prefer to invest in workshops and widespread training in tools and methods, rather than focusing just yet on supporting larger-scale digital research projects.

Confusion about institutional aims can result in digital humanities centers or systems that do not suit the purposes for which they were supposedly created.

2. **Obtain support (financial and otherwise) from senior administrators to make digital scholarship an institution-wide priority.**

It is rare that campus-wide systems of support for digital humanities emerge solely from grassroots efforts of faculty members. Rather, the authority and funding needed to enact a plan that draws from multiple service units and even

departments often requires strong support from above, as well as evidence of demand from faculty and staff.

In some cases, senior administrators are already advocates. This is the case with Indiana University President Michael McRobbie, who over the last seven years has repeatedly manifested his long-stated support for digital scholarship. While vice president for information technology, his strategic plan for IT explicitly included the arts and humanities as disciplines just as deserving as the sciences of IT infrastructure to foster "flexibility and experimentation."[55] In addition to building the long-term digital hosting system that is available to all faculty today at no cost, in 2007 he initiated and partially funded what became the Institute for Digital Arts and Humanities and in October 2013 dedicated $15 million to establish the IU Media Digitization and Preservation Initiative in order to "digitize, preserve, and make available all time-based media objects on all campuses of IU judged important by experts."[56]

When grassroots organizing among faculty members does lead to a larger plan for support, it is often because faculty have been able to align their ambitions with existing institutional goals.

In other cases, faculty and library advocates have found ways to make a strong case for advancing campus priorities through support of digital research initiatives. At both the University of North Carolina and the University of Nebraska, major investments in DH technical and human infrastructure came about when a core group of faculty and staff practitioners made the case to administration at a moment when interests aligned. According to Professor Will Thomas at Nebraska, when a new senior vice chancellor for academic affairs took office, Thomas and Kenneth M. Price, director of the Center for Digital Research in the Humanities (CDRH), organized support from several department chairmen and made the case for a cluster hire of six to seven positions in the digital humanities, which dovetailed well with a campus-wide decision to invest in cluster hires. So the DH initiative was offered as a guinea pig. Further bolstering their case was that the Center already had several successful projects, and that the English and history departments could demonstrate significant grant support.[57]

At the University of North Carolina, the Carolina Digital Humanities Initiative, a major new investment in DH, was funded by The Andrew W. Mellon Foundation in 2012, and more than matched by institutional investments. According to Professor Robert Allen, the director of the university's Digital Innovation Lab and Co-PI of the Mellon grant, in 2011, William Andrews, the fine arts and humanities dean in the College of Arts and Sciences, sought out ideas from faculty that could contribute to a campus-wide innovation initiative and related development campaign led by the chancellor. It was important, Andrews felt, for the humanities to be at the innovation table alongside units from the sciences and technology.

The following year, Andrews, Allen, and John McGowan, director of the university's Institute for the Arts and Humanities, crafted a proposal calling for a coordinated "intervention", including hiring three new DH faculty in the College of Arts and Sciences, four two-year DH postdoctoral fellows, graduate

55 Indiana University, "Information Technology Strategic Plan," 1998.
56 McRobbie, "Looking to the Future," 2013.
57 Between 2010 and 2012, the history and English departments at the University of North Carolina secured research funds totaling $2 million and $4 million respectively, much higher sums than humanities departments typically generate.

fellowships, and shared faculty fellowships between the Digital Innovation Lab and the Institute for the Arts and Humanities.

When grassroots organizing among faculty members does lead to a larger plan for support, it is often because faculty have been able to align their ambitions with existing institutional goals, such as the teaching mission of a liberal arts college. At Hamilton College, Angel David Nieves, associate professor of American Studies, received a great deal of support from senior administrators when founding (and planning for the future of) the Digital Humanities Initiative (DHi), partly because he requires each project that comes through the DHi to state upfront how it will engage with and impact students.

3. **Invest in people (maybe not a lot of people, to start).**

Time and again, the theme of "people" was raised as a key factor of success, and in several different ways, as Stephen Ramsay of Nebraska's CDRH pointed out in his piece of the same name, "Centers are people."[58] Ramsay notes that he "cannot think of a successful digital humanities center—anywhere in the world—that did not begin with a bunch of people who had found each other through various means and who were committed to the bold and revolutionary project of talking to one another about their common interests. . . . How much money do you need to start a center? Either none, or whatever the beer costs." This gets at a deep truth: While structures, coordination, and strategy are needed once a campus starts to see evidence of activity and demand, without the deep engagement of a person or core group, those arguments are at best hard to make and at worst, irrelevant.

While structures, coordination, and strategy are needed once a campus starts to see evidence of activity and demand, without the deep engagement of a person or core group, those arguments are at best hard to make and at worst, irrelevant.

To jump-start the process, in recent years libraries have hired staff in "digital humanities coordinator" roles. Often, these people are newly credentialed PhDs with experience building DH-related projects. Once on campus, they play a couple of key roles: as a main contact for PIs who are seeking to start new projects but don't know where to begin; and as a representative of "DH" more broadly on campus, organizing talks and workshops to incite conversation and engagement with digital humanities. Alex Gil at Columbia, Carrie Roy at Wisconsin, and Miriam Posner at the University of California at Los Angeles are among this new generation of DH advocates, serving as DH educators and partners for those who are interested in digital scholarship on campus, and as project leaders in their own rights. They and their colleagues in similar positions hold expertise in digital techniques and methods as well as in some of the disciplines of the faculty approaching them, which also enables them to be deeply involved in the scholarship itself.

In other cases, key staff may be directors of DH centers or faculty PIs with well-respected projects. The pantheon of DH leaders—such figures as Katherine L. Walter and Kenneth Price at Nebraska, Ray Siemens at the University of Victoria, Neil Fraistat at the Maryland Institute for Technology in the Humanities, Bethany Nowviskie at the University of Virginia's/Scholars' Lab—have been clearly identified with their centers.

And yet, a strong campus strategy ought to be able to endure beyond the tenure of any one person. While the enthusiasm and support for DH on these campuses

58 Stephen Ramsay, "Centers are People," April 2012 blogpost, http://stephenramsay.us/text/2012/04/25/centers-are-people/.

have undoubtedly benefited from having deeply knowledgeable staff members in these roles, there is still the risk of putting all eggs in one basket. With only one prominent advocate for DH, what happens if that person leaves the institution? If that person is the primary locus of activity, managing all the relationships and inciting all the excitement that make DH possible on a campus, how will this work continue if he or she moves on?

In recent years, several high-profile leaders in the digital humanities have moved from the institutions where they made their names to new positions elsewhere. Julia Flanders moved to Northeastern from Brown; Dan Cohen and Tom Scheinfeldt left George Mason's Roy Rosenzweig Center for History and New Media for the Digital Public Library of America and for the University of Connecticut, respectively; and Michael Witmore, formerly of Wisconsin, became the director of the Folger Shakespeare Library. When the chief advocate leaves an institution, there can be substantial setbacks. At Wisconsin, for instance, a strong start in drawing together campus resources slowed to a near halt, and many indicated that this was directly tied to staff turnover at that time.

To develop a system to sustain digital humanities resources

1. **Knit deep partnerships among campus units (library, IT, digital labs).**

Many of those interviewed for this study cited collaboration as key. Declaring that multiple units on campus will work with one another is one thing; forging systems and collaborations to make this work is another. In certain cases, we have seen specific tactics that support this deeper level of coordination.

For the past two years, Patricia Steele, dean of libraries at the University of Maryland at College Park (UMD), has sought to bring her unit closer to the university's Maryland Institute for Technology in the Humanities (MITH). Her primary aim in forging this connections is to train her library staff so that they can develop their own digital scholarship expertise and better support faculty project leaders on campus: "A major responsibility as librarians is to understand and advance digital humanities and our commitment will only continue to grow in the future."

The relationship between the UMD libraries and MITH is multifaceted. One way Steele has forged this relationship is by working with MITH director Neil Fraistat to create a staff position that would bridge the two units and look for ways to foster collaboration between them. Trevor Munoz was hired to occupy that role and has reached out to his fellow librarians to take part in a project incubator program that encourages digital collaboration and experimentation between the two units.[59] Steele also provides resources to MITH in the forms of money ($45,000 annually) and workspace. She strategically placed MITH next to the library's special collections in the hope that it would breed additional interesting collaborations. Finally, because MITH views itself as an R+D group, it recognizes that it is not the best long-term home for a project in need of ongoing development, so the Center provides a small amount of support to the library's digital stewardship unit in order to receive some assistance in taking care of projects after they're created.

59 See Munoz, "Digital Humanities in the Library Isn't a Service," 19 August 2012.

2. **Rationalize support and manage faculty expectations.**

At institutions of all sizes, whether the library, IT department or a digital humanities center, resources are limited, and developing ways to decide which projects to take on and what level of support to offer lies at the heart of the sustainability issue.

As Mike Roy, dean of library and information services and CIO at Middlebury put it, "the culture of libraries and IT is to say yes to everything; we're terrible at saying no and so we almost always get ourselves overcommitted." Even more important than learning how to say no is having the principles to back it up. Some of the "lab" model organizations already have a selection process in place, including the Columbia Center for New Media Teaching and Learning (CCNMTL), which has a formal application process for faculty seeking to work with the lab's developers.[60] There are some very good examples of this practice already in place at libraries, as well. New York University Libraries' Jennifer Vinopal has written about her plan for Digital Scholarship Services and a tiered model of service,[61] which can help libraries determine early on which projects will require deeper investments, and choose which of those to take on.

At the University of Virginia a similar model is in place with the library's Digital Curation Services group, which "does things in a tiered way, from deposit into a repository, [to an] interactive thing. . . . If no one is using [the digital resource], we want to at least archive it, so you could pull it out of mothballs years from now," according to Eric Johnson, former head of outreach and public services, Digital Research and Scholarship/Scholars' Lab. Additionally, there is a kind of division of labor between Digital Curation Services and the Scholars' Lab, where the latter "is mainly for developer types and building types" and the former concentrates on supporting long-term projects.

The corollary to the question of what projects to take on and take responsibility for is deciding how and when to stop investing in older works that may no longer be worth the effort. As Ray Siemens at the University of Victoria described, several years ago efforts to sustain a legacy project had become so demanding that his group felt compelled to make the tough decision of whether to invest in such projects for the long term, if doing so would come at the expense of new research. The group agreed to work with projects for a certain amount of time and then leave the rest to the researcher. As Siemens put it, "We have developers and mediate access to them."

3. **Figure out how to use scale solutions, without overly limiting the creativity and research aims of project leaders.**

As faculty interest in DH methods and techniques grows, in order to meet the demand for their services, some library, IT, and digital scholarship units have found it increasingly important to develop and encourage the use of scalable

60 See CCNMTL's New Project Application Form at http://ccnmtl.columbia.edu/web/assets/pdf/projectapplicationform_08.pdf

61 See the recent interview of her conducted by Ian Chant, "From Preservation to Partnership: NYU's Jennifer Vinopal Talks Libraries and Digital Scholarship," *Library Journal*, 26 November 2013, http://lj.libraryjournal.com/2013/11/academic-libraries/from-preservation-to-partnership-nyus-jennifer-vinopal-talks-libraries-and-digital-scholarship/#_. See also her "SERVICES! For All Areas of Knowledge!" 9 January 2014 blog post, http://vinopal.org/2014/01/09/services-for-all-areas-of-knowledge/.

techniques, so that every new project is not a one-off requiring special attention. The challenge is in balancing the custom needs of the scholar with more standardized solutions, for example for digital publishing, collection building, GIS, and other common types of digital work.

The libraries at Indiana University are deeply struggling with this issue right now. As Jon W. Dunn, interim assistant dean for library technologies, explains, for years the library was successful in "building systems with applications or other software or workflows to support that project. Then we'd build another set just for this project and this and this and this." But when demand increased, "it became clear…that that isn't a model that can scale. So we shifted to focusing on… services that could take on new collections, new projects without having to have a lot of additional programming." This situation has spurred the digital projects team to begin to identify key tools and standards that they will help all project leaders to use and follow (e.g., Omeka for digital exhibits); should a faculty member's project require greater customization or more attention, a review process (still in development) will determine whether the library is willing or able to commit to assisting that project.

Adoption of this strategy of scale solutions includes an important component of managing faculty expectations and avoiding a scenario some library staff described as "the tyranny of the project."

Adoption of this strategy of scale solutions includes an important component of managing faculty expectations and avoiding a scenario some library staff described as "the tyranny of the project" that occurs when a faculty member demands a custom-built site. As Julia Flanders at Northeastern University described: "The university has set things up by giving us a fixed amount of resources. . . . So we take that problem and we share it with the faculty and we say 'If you want to create lots and lots of one off projects that's great . . . but we warn you that we do not have the resources to support them over the long term so you might as well not bother. Instead [we encourage you to] use the systems that we have in place as creatively as you can. And we take responsibility for designing systems that will give you as much expressive latitude and research potential as possible. And for many classes of projects that's all you need. You can innovate at the content level [if not] at the system level." At Columbia University's Center for Digital Research and Scholarship, director Rebecca Kennison works with faculty who have publishing-related projects, and finds that using templates most often solves the problem, "though we don't call them templates."

Encouraging faculty and staff to adhere to standards and shared platforms has become a common aspiration, if not yet quite a reality. The benefits of this model extend in two directions. First, it keeps overburdened programming staff from having to build and service custom platforms and interfaces. But the second benefit is perhaps even more profound. With so much new scholarly content making its way into innovative digital resources, how can the value of that content be sure of living on, beyond the shelf-life of the interface it was born with? These scale solutions align with efforts of library and technical staff in data preservation: treating scholarly content—whether text, image, or AV-based—as data that can be identified and stored independent of the container through which it is delivered to a web-based audience.

4. **Clearly communicate pathways and expectations to faculty.**

Even the best-drawn and most rational strategies for providing institutional support for DH can flounder if they are not clearly communicated to the current and potential project leaders who stand to benefit from them.

"We will not hold them to 'you did not do a book' or 'we cannot review what you have done.' We are hiring them to do digital scholarship, as a significant component of their scholarly work."

Particularly when it comes to the way a university regards digital work when considering tenure and promotion, uncertainty concerning how DH work will be reviewed in tenure and promotion decisions is likely to dampen enthusiasm for engaging in time-consuming new digital initiatives. Some campuses, though, have taken important steps to clarify these expectations. According to Will Thomas, chairman of the History Department at Nebraska–Lincoln and a longtime fellow of the Center for Digital Research in the Humanities (CDRH), when new faculty were recruited as part of a recent series of "cluster hires" in the digital humanities, history candidates were clearly told that "we expect you to produce digital scholarship…and will review your scholarship for its significance and impact… in whatever form you have published it." Thomas continued, "this puts us on notice that we will not hold them to 'you did not do a book' or 'we cannot review what you have done.' We are hiring them to do digital scholarship, as a significant component of their scholarly work." The department also promises to work with CDRH to seek external evaluators, when needed, making it clear that they will find the expertise needed to review the work.

Once faculty are engaged and building digital projects, making a pathway they can follow for support is another critical step. This is the impetus that drove Indiana University President Michael McRobbie, when he was CIO and vice president for research, not just to offer access to tech infrastructure to all faculty and graduate students—including those in the humanities—but to clearly communicate that offer to them. About five years ago, he sent his staff to meet with faculty in order to learn about their research needs, and even today, the IT unit he once ran still conducts service surveys of those on campus. Additionally, the key public strategic documents he wrote for IT several years ago and the presentations he gives today as IU president consistently underscore that the vast technological infrastructure of IU—storage as well as hardware and tools—is freely available to all faculty and graduate students, regardless of discipline; this is his "philosophy of abundance."[62] So that researchers will know exactly what resources they can use, where those resources are located, and whom to contact for assistance, IU's University Information Technology Services (UITS) has created an elaborate website for its Research Technologies group.[63] The mission statement at the top of the landing page makes clear the level of involvement PIs can expect from UITS: the unit aims to "enable new possibilities in research, scholarly endeavors, and creative activity," that is, to provide scholars with the infrastructure and education they need to do the work themselves. What makes this exceptional is the level of transparency in UITS and the lack of chargeback for the scale of research support services faculty and graduate students can enjoy.

62 Indiana University, "Information Technology Strategic Plan," 1998.
63 UITS, Research Technologies, http://uits.iu.edu/page/avel.

5. **Measure and communicate impact.**

Assessing the value of digital projects can be an imprecise business, which makes it all the more important for digital project leaders and heads of units undertaking this work to determine what measures will be most meaningful to prove the importance and impact of what they are doing. For those running lab-like centers, the proof of success is in the volume of grants and contracts awarded, a revenue target that can support the efforts of the team. Scholar-led initiatives will want to gather data on citations and use of the work in other research and teaching. Those focused on library-based digital collections will want to gain a strong sense of who is using the materials, and how, in order to make a strong case to administration for future support.

Conclusion: Toward Models for Support

Digital humanities means many things to many people, and debates concerning how best to define it may rage on for a while longer. In the meanwhile, faculty and staff are already building websites, databases, and digital collections. Faculty and staff must work closely together at the earliest stages of project planning to identify which projects will need longer-term support and to define just what that support will consist of.

Clearly, the drive to create is not waning. Faculty are not just using digital tools and content; many see themselves as creating them, too. As more and more faculty and students learn new methods, perhaps even learn some programming and see the benefit it may hold for their research, how much more demand will this place on libraries, IT units, and DH centers?

Still, lest this study give the impression of a wave of DIY-ers storming the provost's office seeking support for all manner of tools and time with costly programmers, libraries and IT units and DH centers are very actively working to develop logics to quickly determine which projects need and merit the investment and which could be equally well served by a "template" or at least somewhat standardized solution. While some faculty may continue to balk at this option, concern may be misplaced. This enthusiasm for making things simply reinforces the recommendation that universities take on this topic campus-wide by developing a set of standards and guidelines so that faculty know just how much is available for them to learn and use… and so the faculty also are aware of what bar must be met in order to unlock the very costly and limited time of university programmers.

So, in this landscape of digital humanities projects, which then actually merit efforts to sustain, and whose job, finally, is it? This is a conversation that needs to take place at the earliest stages of project planning and suggests a greater need for the development of systems to identify which projects require and qualify for their support and the forms that support will take. Each unit—the library, IT, and so forth—could benefit from its own such system.

But they are also needed across the whole institution. Collaboration is a catchphrase heard quite often, but the difficulty is in carrying it out when all the (well-meaning) actors are working at full capacity. And yet collaboration is badly needed. Even among those stakeholders who are on campuses with designated DH centers, there is rarely an end-to-end solution in place to support faculty from planning, to building, to preservation and outreach. While most campuses had multiple places for faulty to get support in planning, content creation, and even

storage, some stages in the digital project life cycle seem not to be owned by any one unit: preservation emerged as an area of concern, and dissemination outreach appeared to be most often left to the devices of the project leader.

While a library may be able to fund a series of workshops, and a DH center may be effective at developing and getting digital projects funded, only an initiative that draws these players (and others) together will result in a system that faculty can rely on. Getting support to more deeply integrate systems may well need to come from the top, though despite some increasing enthusiasm for engaging with "digital humanities," many administrators remain uncertain about just what DH is and whether or why it merits special consideration. In many cases, the issue of sustainability of digital humanities projects has not reached much beyond the library and academic departments. Without sharing the benefits of digital humanities projects with senior administrators, gaining their support will be difficult if not impossible.

And yet, the key piece missing from the "digital life cycle" in nearly all the campuses we examined was an active attempt to explicitly drive impact, in whatever the most relevant form would be—Larger audiences? Broader user engagement? More citations? Deep integration with other related projects? Value to scholars? Value to the public? Few campus faculty or units seem to be regularly measuring usage of DH projects and few are undertaking activities to increase the impact of the works they have taken on. University presses do not often have a seat at the table in these conversations, but perhaps they should.

What would a comprehensive system look like?

At the end of the day, the system that will work best for an institution, its faculty and staff, is the one most closely tailored to the goals that institution holds dear. All systems need to address all the phases that project leaders must shepherd their projects through; but the creative work comes in determining to what extent it suits the campus to build a system that can support experimentation and learning for a broad base of faculty versus a system with a top-of-the-line research lab to be put to the service of only the most innovative digital projects.

For those campuses just starting off in this area, the "network" model holds out some real promise, but active steps must be taken by senior administration to encourage this to happen in practice, not just on paper. A fully implemented network model for sustaining digital resources would include:

- **A clear starting point for any faculty or staff developing digital projects.** This should be happening at planning stages of a project, not once the grant has been awarded, so that needed costs can be built into the project grant proposal. This, too, provides the central coordinating unit with a first chance to see what resources will be needed down the road and to help the project leader identify the best options for getting help, whether in programming, user experience design, or outreach. A central starting point would also help to create a campus-wide directory of digital projects, something very few campuses can claim to have.

- **An "intake" process that allows** an important screening process (if not a selection process) to help the project leader define the intentions of the project and to try to imagine what future (i.e., post grant) activities might include. This would be one way to encourage faculty to work with existing platforms or "templates" rather than pursue customized solutions that are difficult to maintain. Long-term plans for hosting should be discussed, as should plans for deposit of digital assets of the larger project.
- **Regular communication among those units on campus with human or infrastructure capacity to share.** Bringing together staff from the library, IT units, and key departments on campus to discuss the life cycle stages and what roles each unit wants to play is a good starting point, but structured communication about capacity and roles is needed to turn a good idea into a system.
- **Establishment of measures of success**, to prioritize ongoing support. Once the project is developed, what "bar" must it attain in order to receive ongoing support? Rather than offering ongoing support in an ad hoc fashion, targets for usage or other forms of measurable impact (including scholarly excellence, usage, research outputs, and so forth) should be reviewed and considered when determining which projects will benefit from any surplus capacity the support units can offer.
- **Bringing in new partners to the digital life cycle to support dissemination activities.** While neither libraries, nor IT units (nor many DH centers) are overly concerned with promotion to build audience and drive usage, the more ambitious DH projects have potential for greater impact that is often untapped. For those campuses with the benefit of an active communications office, a university press, or other outreach capacity, bringing those players to the table to consider a role in helping to share the fruits of digital research with a wider audience could provide a much needed boost.
- **Documentation that spells out the process to all faculty and staff members.**

Certainly, there are tactics available for incorporating both a service mentality and an entrepreneurial lab environment into a single campus strategy for support. At this moment of transition, are we already at a point where the strains on the system suggest paring back, rather than continuing to urge more building? How will faculty respond when librarians (or lab leaders) tell them that they must "innovate on content," not on technology? The ability of campus leaders to set policy that clearly communicates the terms that will govern who gets to build a digital humanities project from the bottom up and who is encouraged to work within pre-existing templates, is critical to being able to manage potentially valuable outputs across the campus.

Digital humanities projects hold the promise of sharing valuable information, scholarship, and community effects with audiences far beyond the borders of a university or college campus. Libraries, in particular, have taken real strides in developing plans to sort and prioritize and to seek scale solutions for hosting and preservation where they can. Lab-based digital humanities centers have set a high bar of entrepreneurial project-formation and cutting edge experimentation. With libraries and DH centers working together and with other key partners on campus, there will surely emerge new methods, ideally capitalizing on both the service and lab models, to support the range of digital humanities projects out there today.

Appendices

Methodology

Landscape review phase

The first phase of our work, the landscape review, provided us with an opportunity to learn about campus support for the digital humanities from a range of perspectives. We examined the expectations of those who create, invest in, and otherwise have a stake in the ongoing lives of digital resources, and we sought to identify points in the life cycle of these projects where host support plays a significant role. Desk research was our first step toward achieving this. We searched the internet for related literature and funding announcements and joined online digital humanities (DH) communities in order to learn about support for these projects, the different ways campuses offer that support, what might be lacking in what they offer, and what is otherwise being said publicly about these matters.

While desk research continued throughout the project—our eighteen-month timeframe afforded us the chance to witness an uptick in media interest in DH—this first round of exploration greatly informed the choice of individuals to interview during the second part of our landscape review. We sought a wide variety of perspectives from stakeholders including senior administrators (provosts, deans, library directors); campus support staff (in libraries, in DH centers); experts in the field of DH; funders; and project leaders. We also reached out to individuals at both large, research-focused universities and small, teaching-focused colleges, public as well as private, so that we could be sure to reflect a range of institutional contexts.

We first sought administrators and DH experts, who we believed could guide us in finding support staff and project leaders to interview. We selected administrators at institutions with demonstrated engagement with digital humanities, according to our desk research. This might mean that their campus has a special funding line for digital scholarship or that it has a center for digital humanities. We aimed to reach as high in institutional administrations as possible—provosts, library directors, deans for research—in order to see at what level of seniority DH is visible. From these individuals, we sought to learn about the institutional strategies in place with respect to DH-like work, the value they see in DH outputs, where and how projects are created and supported on campus, and how those support activities are funded.

Experts in the digital humanities, we believed, could help us to understand more about the advent and nature of DH work in the United States and where it is taking place, as well as how DH support is manifested on their campuses. We found many of these experts because they are also directors or senior staff of digital humanities centers, so we also asked them to tell us about why their centers were created; the mission, governance, and financial underpinnings of their centers; and the ways that their centers help create and think about the sustainability of DH projects.

Speaking with administrators and DH experts gave us a better sense of which campuses to plumb for more information from project leaders and support staff

and where gaps remained in our understanding. Close to the same time, our advisory committee encouraged us to create profiles of institutions, rather than interview several dozen individuals, all on different campuses. By identifying fifteen institutions where DH activity is taking place in a significant way—as evidenced by large DH grants, a DH center, or other explicit DH strategic initiatives—we would hear from two or more perspectives how that work is being supported. The other key benefit of creating campus profiles was the opportunity to gain a deeper understanding of institutional strategy; in turn, this would provide us with a stronger basis of comparison for characterizing the different types of approaches taken by institutions and would put us in a better position to select campuses for the deep-dive phase of our research.

Our early interviews and knowledge of active campuses and grant funding helped us select the campuses we ultimately profiled. Our next step involved interviewing support staff from these institutions' libraries—as this is the unit with the most experience in creating digital resources and helping with digital humanities work—and faculty with digital humanities projects. From the former group, we sought to learn how and why the libraries became involved in the digital humanities, who at these libraries is involved, and what they believe makes a digital resource sustainable. From project leaders, we aimed to hear about the nature of their projects, the types of support they received from their institutions, their future plans and goals for their projects, how these hopes or expectations may have changed over time, how they measure the success of their work, how they communicate the value of their projects to their supervisors, and whether they either need or want any additional support from their institutions for their projects.

In the end, we profiled thirteen institutions—twelve public and private research universities and one private liberal arts college—and interviewed 46 individuals from 24 different organizations and institutions (*Figures 1 and 2*). This count includes four funders with whom we spoke. The complete list of our interviewees is located in appendix B, and the interview guides that directed our conversations are located in appendix C.

Private	Public	Liberal Arts
Brown University	George Mason University	Hamilton College
Columbia University	Indiana University	
New York University	Michigan State University	
Princeton University	University of Maryland	
Stanford University	University of Virginia	
Yale University	University of Wisconsin	

Figure 1. Campuses profiled in the landscape review

		Public	Private	Total
Large universities	Project Leaders Administrators Support staff	2 9 6	2 10 0	29
Small Colleges	Project Leaders Administrators Support staff	0 0 0	0 4 2	6
Staff from funding agencies		2	2	4
Experts in digital humanities				7
Total				46

Figure 2. Interviewees in the landscape review

Deep-dive phase

In order to provide greater depth to our understanding of host support for digital humanities, we supplemented what we learned in the landscape review phase with "deep-dive" investigations of several institutions.[64] By digging deeper, we believed we would be better situated understand the campus strategies in place to support DH. As such, we aimed to compile qualitative and quantitative data that could help drive decision-making around support for DH as well as to collect financial data that would illustrate the costs (and revenues, if they existed) of creating and sustaining DH content, software, and data.

Although the campuses we ultimately selected have different histories and governance, our goals in studying each were the same. Accordingly, we took the same general approach at each institution: working with a coordinator who would help orient us on campus and help arrange our two visits to campus; interviewing key stakeholders and project leaders using the interview guides developed in the landscape phase; and conducting a survey of faculty in select departments in order to get a sense of where DH activity is taking place and what kinds of resources are being created.

At the beginning of the deep-dive phase, with the encouragement and support of our advisory committee, we made two revisions to our proposed deep-dive method. First, we elected to undertake in-depth research into four, rather than our projected two, institutions, as this would provide a richer set of findings with a greater basis for comparison and with greater potential for generalization. Second, we elected not to ask project leaders on these campuses to provide detailed financial reports for their digital resources; given that we were confident only a small percentage of them would even be likely to have budgets, we thought that it would be needlessly onerous to ask them to fill out a report with figures attached to in-kind and direct support for various project-related activities because many of those figures might well be guesses. In place of dollar amounts, we ultimately asked

64 An implementation toolkit with all the documentation used during the deep-dive process—a deep-dive research protocol, a project briefing for interviewees, the faculty survey questionnaire, a briefing on potential on-campus events to share back the study's findings—is located in at http://www.sr.ithaka.org/research-publications/sustainability-implementation-toolkit.

them to share with us the way the various forms of support they received were funded, that is, whether they were paid for directly or offered in kind.

In selecting the four deep-dive institutions, we looked for two campuses that have significant DH activity, but are in the early stages of developing strategies for DH support, and for two campuses with established DH centers or some kind of similar shared infrastructure (e.g., in the library or information technology). The campuses selected to represent the former type were Brown University and Columbia University, while Indiana University Bloomington and the University of Wisconsin at Madison were selected to represent the latter type.[65] They were chosen in conversation with our advisory committee, after our research team had conducted screening calls that sought to share a bit about what serving as a deep-dive site would entail, to gauge their willingness to participate, and to confirm our understanding of the campus profiles. After six screening calls were conducted, we selected our four deep-dive institutions.

After productive early planning calls to teams of DH stakeholders on each campus, we worked with them to select the campus coordinators who helped us arrange our visits, select interviewees, develop the faculty questionnaire and deployment plan, and schedule events to share our findings at the end of the study. Our coordinators were Harriette Hemmasi, university librarian at Brown; Barbara Rockenbach, director of the Humanities and History Libraries at Columbia; Andrew Asher, assessment librarian at Indiana; and Carrie Roy, research associate in Wisconsin's library technology group. Lee Konrad, associate university librarian for technology strategies and data services at the Wisconsin library, and Alex Gil, digital humanities coordinator at Columbia, were also instrumental in facilitating our research on their campuses.

Initial interviews

Our first visits to the four campuses took place between June and September of 2013. During these trips, we focused predominantly on interviewing senior academic, library, and IT administrators and support staff; at a couple of institutions, we also interviewed a handful of faculty who had created or managed digital resources. We interviewed a total of 58 individuals: 11 at Brown, 12 at Columbia, 16 at Indiana, and 19 at Wisconsin (*Figure 5)*. Interview guides are included in appendix C.

We hoped this approach would help us to see whether the campuses had clear beginning-to-end solutions for where project leaders could seek help at various stages of the life cycle of their resources, or whether there were redundancies in support on campuses. *Figure 3* is the life cycle chart we used with our interviewees, asking them to sign their names under the stages for which they offer help, but well aware that the distinctions between these stages may be flexible and the unidirectionality of the diagram is a generalization and not necessarily representative of the development sequence of a specific project. The stages we identified were:

65 It is worth noting that, after deeper investigation, the categories we had used to describe these campuses did not always hold up. We learned that senior administrators at UW, for instance, had made efforts to build a network of DH support on campus—an intentionally decentralized, yet coordinated, model—but that staff and funding changes inhibited this plan from being fully realized. Similarly, Brown, which we had thought of as a decentralized campus just beginning to develop strategies to support DH, turned out to be fairly far along in developing an institutional strategy (albeit ad hoc) by centralizing support in the library.

- **Project planning**, encompassing the decision-making processes leading up to the creation of a project, from defining the scope of the project, to determining who will participate on the project team, reviewing its data management plan, and discussing sustainability goals.
- **Content creation**, which may represent creation of original born-digital scholarship, digitization of images, documents or other analog materials or the production of content to populate a database.
- **Technical development**, which includes programming support to develop databases and to design user interface and any tools needed for the project.
- **Storage**, which covers the format and scale of the technical infrastructure that houses the data that make up the project.
- **Project management**, that is, the regular oversight of and responsibility for managing and developing the project.
- **Technical upkeep**, which includes the ongoing need that most if not all projects will have for technical maintenance and upgrades, whether of the interface, discovery tools or optimization for search, or newer versions of tools and platforms the project makes use of.
- **Preservation**, that is, the activities that go into ensuring the long-term accessibility of the digital content.
- **Dissemination**, which includes any activities related to sharing the finished project with its audience, whether that means hosting on a public platform or strategic audience outreach.

Figure 3. Life cycle of digital resources

While it was extremely useful to have our interviewees indicate where they fit on the life cycle, it only presented us with one side of the picture: what they believed their roles to be in supporting digital resources. We also wanted to hear from faculty, to find out where on campus they had actually received support.

Faculty surveys

In September and early October 2013, the Ithaka S+R research team developed a questionnaire to gather more detailed information about project support and other related information from the project leader point of view. This instrument was reviewed by our campus coordinators, who also helped us to identify between four and seven departments with significant digital humanities activity at their institutions. Our plan for deploying the survey was to survey all faculty members in a handful of departments so that we would be able to reach a wider group of respondents and ask more general questions about the various ways they engage with digital resources, before posing questions about the project life cycle (*Figure 3*) only to those who had created or managed projects hosted at their institutions.

We had three overarching goals in conducting the surveys:

1. *Take a snapshot of all engagement with digital resources in the departments selected*, broken down by resource type (primary-source collections; secondary-source collections; informal scholarly communications, such as blogs and tweets; digital platforms; data produced using computational methods; and software or tools)
2. *Understand who are the digital resource creators*, by asking how respondents engage with these various types of resources (use in teaching, use in research, or created or managed this type of resource)
3. *Learn where digital resource creators who have campus-based projects are turning for support at each stage in the project life cycle*

The survey was written in such a way that most respondents would only answer a handful of questions about their engagement with digital resources. A second stage of questions would be posed only to those who had created or managed digital resources (on average, 46% of all respondents), and a third stage of questions only to those whose top-priority resource was hosted at their home institution (on average, 21% of all respondents). (The full survey instrument can be found in appendix D.)

Once the departments to be surveyed at each institution were selected (*Figure 4*), the Ithaka S+R research team deployed the questionnaire on the Qualtrics platform. At three of the institutions, invitation emails were sent using the name of the chair of the invitation recipient's department, with the consent of the chair; at Brown, invitations were sent using the name of the dean of the faculty. The survey periods were staggered at each institution, but took place in fall 2013, and all lasted three weeks. Twice, invitation reminders were sent under Nancy Maron's name to those who had yet to answer the questionnaire. In the end, we heard from 39% of the faculty contacted at Brown, 41% at Columbia, 37% at Indiana, and 31% at Wisconsin.

Brown (39% response rate)	**Columbia** (41% response rate)	**Indiana** (37% response rate)	**Wisconsin** (31% response rate)
Archaeology and the Ancient World	Art History	Communication and Culture	Communication Arts
Classics	English and Comparative Literature	English	English
History	History	Folklore and Ethnomusicology	Curriculum and Instruction (School of Education)
History of Art and Architecture	Music	History	School of Library and Information Science
Italian Studies		Musicology (Jacobs School of Music)	Sociology
John Nicholas Brown Center		Music Theory (Jacobs School of Music)	
Literary Arts		School of Information and Library Science	

Figure 4. Departments surveyed, by institution

The topics covered in the questionnaire include the breadth (variety of resource types) and depth (use versus creation or management) of faculty engagement with digital resources; descriptions of the resources created by faculty (type, age, stage of development); sources and units of institutional support for the resources; funding for the resources; and concerns the faculty have about the future of their resources.

Data analysis

Once the survey closed, the research team downloaded the data from Qualtrics, organized, coded, and stored it in an Excel spreadsheet. The first step in analysis was to confirm that the responses we received were representative of the departments we surveyed and that no single department or faculty rank (at the schools for which we had that information) was under- or overrepresented.[66] We then scanned the data for incomplete responses, omitting those respondents who had completed less than half of their sections of the survey, because we could not be sure whether they had intended to complete or correct their answers later.

Frequencies provided a sense of the general behaviors of faculty at each institution. Using these figures as a guide, we looked at subgroups within each institution, seeking to understand whether faculty in the same department, of the same rank, and with similar kinds of resources, funding, or sustainability concerns had anything in common. After looking for these patterns for each campus, we compared subgroups across the four deep-dive campuses where the categories of comparison were the same—for example, rank, generic campus unit (library, IT, department), and funding sources. The aim of the comparative approaches in both the individual campus subgroups and across institutions was to identify behavioral patterns and similarities that might not show up as significant in statistical analysis, due to our small sample size, but that might nonetheless be interesting for further investigation.

Faculty interviews

Using the data as a guide, we then selected faculty to interview, seeking to hear from faculty with a variety of experiences: individuals from different departments, with different types of projects, funding sources, and sustainability concerns. Faculty were only asked for an interview if, in the final question of the survey, they had indicated that an Ithaka S+R researcher was allowed to contact them and if they had provided their contact information. Our interviews focused on confirming our understanding of their answers and learning more about the motivations for the decisions made by the project leaders in developing and supporting their resources.

66 With the exception of the Sociology Department at Wisconsin, which had an 11% response rate, all departments at all universities had a 29% or higher response rate.

In the end, we interviewed a total of 29 faculty members, 9 at Brown, 5 at Columbia, 9 at Indiana, and 6 at Wisconsin (*Figure 5*).

	Brown	Columbia	Indiana	Wisconsin
Senior administrators	8	5	8	5
Support staff	3	7	8	14
Faculty	9	5	9	6

Figure 5. Numbers of deep-dive interviewees, by institution

Final campus visits

As the final step in our deep-dive investigations, in February and March of 2014, we returned to each of the campuses we studied to present the findings from our interviews and faculty surveys. Some of these presentations were before large groups of twenty and focused on top-level findings in comparison to what we learned at the other campuses; some were in small groups of key stakeholders where we concentrated on the details of what was learned at that specific university and potential future directions for a coherent campus strategy for DH support. The meetings with key stakeholders were particularly helpful for understanding the motivations of senior administrators who have chosen to commit their institutions' resources to supporting digital humanities work as well as the metrics they use to determine whether those systems of support are successful. Finally, during both the larger presentations and the smaller meetings, administrators and staff from each of these institutions responded to questions about the Sustainability Implementation Toolkit, including what types of guidance would be most useful to them and in what form.[67]

67 The Sustainability Implementation Toolkit is available at http://www.sr.ithaka.org/research-publications/sustainability-implementation-toolkit.

List of Interviewees

Deep-dive interviewees

Brown University

- Susan E. Alcock, Director, Joukowsky Institute for Archaeology and the Ancient World; Joukowsky Family Professor of Archaeology; Professor of Classics
- Andrew Ashton, Associate University Librarian for Digital Technologies, Brown University Library
- Jean Bauer, Digital Humanities Librarian, Brown University Library
- Katherine Bergeron, Dean of the College; Professor of Music
- John Bodel, W. Duncan MacMillan II Professor of Classics; Professor of History
- Jamie Combariza, Executive Director, Center for Computing and Visualization
- James N. Green, Professor of History and Brazilian Culture
- Joanna Gouldi, Assistant Professor of History
- Harriette Hemmasi, Joukowsky Family University Librarian
- Nancy J. Jacobs, Associate Professor of Africana Studies and History
- Steven Lubar, Professor of American Studies, History, and History of Art and Architecture; Director, John Nicholas Brown Center for Public Humanities and Cultural Heritage
- Kevin McLaughlin, Dean of the Faculty; Nicholas Brown Professor of Oratory and Belles Lettres; Professor of English and Comparative Literature
- Joseph S. Meisel, Deputy Provost
- Elli Mylonas, Senior Digital Humanities Librarian, Brown University Library
- Ravi Pendse, Vice President, Computing and Information Services; Chief Information Officer
- Ronald M. Potvin, Assistant Director and Curator, Brown Center for Public Humanities
- Massimo Riva, Professor and Chair of Italian Studies
- Mark Schlissel, Provost
- Michael P. Steinberg, Director, Cogut Center for the Humanities; Professor of History and Music; Associate Editor, *The Musical Quarterly* and *The Opera Quarterly*
- Andreis van Dam, Thomas J. Watson, Jr. University Professor of Technology and Education; Professor of Computer Science

Columbia University

- Carlos Alonso, Dean of the Graduate School of Arts and Sciences

- Robert Cartolano, Associate Vice President, Digital Programs and Technology Services
- Kenneth D. Crews, Director, Copyright Advisory Office
- Stephen Davis, Director, Libraries Digital Program Division, Columbia University Libraries
- Ansley T. Erickson, Assistant Professor of History and Education
- Alex Gil, Digital Humanities Coordinator, Columbia University Libraries
- Eileen Gillooly, Associate Director, Heyman Center for the Humanities; Associate Professor of English and Comparative Literature
- Karl Jacoby, Professor of History
- Damon Jaggars, Associate University Librarian for Collections and Services, Columbia University Libraries
- Rebecca Kennison, Director, Center for Digital Research and Scholarship, Columbia University Libraries
- Adam Kosto, Professor of History
- Maurice Matiz, Acting Executive Director, Center for New Media Teaching and Learning
- James G. Neal, Vice President for Information Services and University Librarian
- Barbara Rockenbach, Director, Humanities and History Libraries
- Michael T. Ryan, Director, Rare Book and Manuscript Library
- Bob Scott, Head, Digital Humanities Center, Columbia University Libraries

Indiana University Bloomington

- Andrew Asher, Assessment Librarian, Indiana University Libraries
- Jason Baird Jackson, Associate Professor of Folklore; Director, Mathers Museum of World Cultures
- Julie Bobay, Associate Dean for Collection Development and Scholarly Communications, Indiana University Libraries
- Alan Burdette, Director, Archives of Traditional Music
- Angela Courtney, Associate Librarian and Head, Arts and Humanities Librarian; Head of Reference Services, Indiana University Libraries
- Michelle Dalmau, Interim Head, Digital Collections Services; Digital Projects Librarian, Indiana University Libraries
- Giuliano Di Bacco, Director, Center of Music Theory and Literature
- Jon Dunn, Interim Assistant Dean for Library Technologies, Indiana University Libraries
- Clara Henderson, Associate Director, Institute for Digital Arts and Humanities
- Wallace Hooper, Project Manager, Programmer, and Analyst, The Chymistry of Isaac Newton; Assistant Director, Catapult Center for Digital Humanities and Computational Analysis
- Brenda Johnson, Ruth Lilly Dean of University Libraries

- Jorge Jose, Vice President for Research
- Ellen MacKay, Associate Professor of English
- William R. Newman, Distinguished Professor and Ruth Halls Professor of History and Philosophy of Science; Director, Catapult Center for Digital Humanities and Computational Analysis
- Fernando Orejuela, Senior Lecturer, Folklore and Ethnomusicology
- Christopher Raphael, Chair of Computer Science; Professor of Informatics; Director, Music Informatics Program
- Daniel Reed, Director, Ethnomusicology Institute; Associate Professor of Ethnomusicology and Folklore
- Greg Siering, Director, Center for Innovative Teaching and Learning
- Robert Sloan, Interim Editor-in-Chief, Indiana University Press
- P. Sarita Soni, Vice Provost for Research
- Craig Stewart, Executive Director, Pervasive Technology Institute; Associate Dean of Research Technologies
- Ruth M. Stone, Associate Vice Provost for Arts and Humanities; Director, Institute for Digital Arts and Humanities; Laura Boulton Professor of Folklore and Ethnomusicology
- John Walsh, Associate Professor of Information Science; Adjunct Associate Professor of English
- Carolyn Walters, Executive Associate Dean, Indiana University Libraries; Executive Director, Office of Scholarly Publishing
- Eric Wernert, Director, Visualization and Analytics, Research Technologies Division, University Information Technology Services

University of Wisconsin at Madison

- Edward Almasy, Director, Internet Scout
- Bruce Barton, Manager, Shared Development Group
- Rosemary Bodolay, Assistant Director, DesignLab
- Bruno Browning, Chief Information Officer of the College of Letters and Science; Director, Letters and Science Learning Support Services
- Jan Cheetham, Project Manager, Academic Technology, Division of Information Technology
- Steven Dast, Senior Administrative Program Specialist, Digital Collections Center
- Paul M. Deluca, Provost
- Peter Gorman, Head, Digital Collections Center
- Erik Gunneson, Faculty Associate, Communication Arts Instructional Media Center
- Michele Hilmes, Professor of Communication Arts
- Eric Hoyt, Assistant Professor of Communication Arts
- Joe Kohlmann, Research Intern, Living Environments Laboratory, Wisconsin Institute for Discovery

- Lee Konrad, Director, Technology Services, University of Wisconsin–Madison Libraries
- Bruce Maas, Chief Information Officer and Vice Provost for Information Technology
- John Martin, Learning Consultant, Academic Technology
- Jon McKenzie, Professor of English; Director, DesignLab
- Melissa McLimans, Academic Librarian, Digital Collections Center, University of Wisconsin–Madison Libraries
- Scott Prater, Shared Development Group
- Eric Raimy, Associate Professor of English
- Carrie Roy, Research Associate, Library Technology Group, University of Wisconsin–Madison Libraries
- Allison Salmon, Senior Software Engineer, Learning Games Network
- Dorothea Salo, Faculty Associate, School of Library and Information Studies
- Peter G. Sengstock, Computer Media Specialist, Communication Arts Instructional Media Center
- Brian Sheppard, Senior Consultant, Shared Development Group
- Jaime Stoltenberg, Special Librarian, Geography
- Michael Trevis, Associate Instructional Specialist, Communication Arts Instructional Media Center
- Robin Valenza, Associate Professor of English
- Edward Van Gemert, Vice Provost for Libraries and University Librarian
- Adam Wiens, Senior Artist, Learning Games Network
- A. J. Wortley, Senior Outreach Specialist, State Cartographer's Office

Additional interviewees

- Robert Allen, Professor of American Studies, History, and Communication Studies; Co-Principal Investigator, Carolina Digital Humanities Initiative, University of North Carolina at Chapel Hill
- Ann Arvin, Vice Provost and Dean of Research, Stanford University
- Elizabeth Beaudin, Director, Digital Initiatives, Yale University Library, Yale University
- Brett Bobley, Chief Information Officer; Director, Office of Digital Humanities, National Endowment for the Humanities
- Sheila Brennan, Associate Director of Public Projects, Roy Rosenzweig Center for History and New Media, George Mason University
- Kim Cassidy, Provost, Bryn Mawr College
- Daniel Chamberlain, Director, Center for Digital Learning and Research, Occidental College
- Perry Collins, Senior Program Officer, Office of Digital Humanities, National Endowment for the Humanities

- Danielle DeVoss, Professor of Professional Writing; Director, Digital Humanities, Michigan State University
- Julia Flanders, Professor of the Practice of English; Director, Digital Scholarship Group; Director, Women Writers Project, Northeastern University
- Catherine Foley, Digital Librarian, Matrix, the Center for Digital Humanities and Social Sciences, Michigan State University
- Neil Fraistat, Director, Maryland Institute for Technology in the Humanities, University of Maryland at College Park
- Zephyr Frank, Associate Professor of Latin American History, Stanford University
- Mike Furlough, Executive Director, Hathi Trust; former Associate Dean for Research and Scholarly Communications, Pennsylvania State University Libraries, Pennsylvania State University
- Susan Gibbons, University Librarian, Yale University
- Matthew K. Gold, Associate Professor of English and Digital Humanities; Director, CUNY Academic Commons, City University of New York Graduate Center
- Joshua Greenberg, Program Director, Digital Information Technology, Alfred P. Sloan Foundation
- Eric Johnson, Head, Innovative Media, Virginia Commonwealth University Libraries, Virginia Commonwealth University; former Head, Outreach and Public Services, Digital Research and Scholarship, Scholars' Lab, University of Virginia Library, University of Virginia
- Sherry Lake, Senior Data Consultant, Data Management Consulting Group, University of Virginia Library, University of Virginia
- Meredith Martin, Associate Professor of English, Princeton University
- Monica McCormick, Program Officer for Digital Scholarly Publishing, New York University Libraries, New York University
- Elijah Meeks, Digital Humanities Specialist, Academic Computing Services, Stanford University Libraries, Stanford University
- David Millman, Director, Digital Library Technology Services, New York University Libraries, New York University
- Sheila M. Morrissey, Senior Research Developer, Portico
- Trevor Munoz, Associate Director, Maryland Institute for Technology in the Humanities; Assistant Dean for Digital Humanities Research, University of Maryland Libraries, University of Maryland at College Park
- Robert Nelson, Director, Digital Scholarship Lab, University of Richmond
- Shawn Nicholson, Assistant Director for Digital Information, Michigan State University Libraries, Michigan State University
- William Pannapacker, Associate Professor of English; Director, Andrew W. Mellon Foundation Scholars Program in the Arts and Humanities, Hope College

- Dean Rehberger, Director, Matrix; Associate Professor of Writing, Rhetoric, and American Culture; Adjunct Professor of History; Adjunct Curator, Michigan State University Museum, Michigan State University
- Patrick Reynolds, Dean of Faculty, Hamilton College
- Michael Rodriguez, Librarian for English and American Literature, Linguistics, and Performing Arts, Michigan State University Libraries, Michigan State University
- Michael Roy, Chief Information Officer; Dean of Library and Information Services, Middlebury College
- Tom Scheinfeldt, Associate Professor of Digital Media and Design, University of Connecticut; former Director-at-Large, Roy Rosenzweig Center for History and New Media and Research Assistant Professor of History and Art History, George Mason University
- Janet Thomas Simons, Associate Director of Instructional Technology; Co-Director, Digital Humanities Initiative, Hamilton College
- Martha Sites, Deputy University Librarian, University of Virginia
- Steve Sowards, Associate Director for Collections Management, Michigan State University Libraries, Michigan State University
- Patricia A. Steele, Dean of Libraries, University of Maryland at College Park
- William G. Thomas III, Chair and Professor of History; John and Catherine Angle Professor in the Humanities, University of Nebraska at Lincoln
- Karin A. Trainer, University Librarian, Princeton University
- Donald J. Waters, Program Officer, Scholarly Communications and Information Technology, Andrew W. Mellon Foundation
- Michael Witmore, Director, Folger Shakespeare Library
- Karin Wittenborg, University Librarian and Dean of Libraries, University of Virginia
- Clifford Wulfman, Library Digital Initiatives Coordinator, Princeton University Library, Princeton University

Interview guides

For provosts and deans for research

Background

- What is your role at your institution?
- What do you understand "digital humanities" (DH) to mean?
- In what ways are you involved with digital humanities projects?

Institutional perspective

- Does your institution have a strategy guiding the incorporation of technology in research and teaching? If so, what was the motivation for that strategy? What does it cover?
- How do you view the value of digital vs. more traditional research and teaching activities and outputs in the humanities?
- Are there any institutional initiatives to develop unified solutions for supporting or enabling access to the digital humanities projects at your institution?
- Do you have any concerns about the state of DH projects and initiatives on your campus (e.g., sustainability, discovery)?
- Do you see the challenges facing DH as different from those of digital projects in other disciplines (e.g., big data, open-access research outputs)?

New DH project creation

- Where are DH projects created at your institution? (In other words, who has the ability to create digital humanities content and tools? The library? The museums? Scholars? Students?)
- What kinds of projects are being created: are they content-based, teaching-focused, or tools? About how many of each exist on your campus?
- Please describe project approval processes in detail.
- What factors do you consider when deciding whether or not to approve a project?
- Are any projects rejected? If so, what factors can lead to this?
- Is there any internal funding for the creation of these projects? If so, about how much is this?
- At the creation stage (during the grant process or an internal process), what is discussed concerning the ongoing aspirations and costs of the project?

Ongoing support

- What kinds of support does your institution provide for these projects after they are created?
- Does your office budget for the ongoing support of these projects?

- If so, about how much is this budget? Which activities are included in the budget (e.g., personnel, administration, overhead, technology infrastructure)?
- If not, who does budget for projects' ongoing support?
- Where (else) in the institution's budget does the ongoing financial support for these projects come from?

- What factors determine whether ongoing assistance will be provided for an individual project?
- Are you aware of any attempts to generate revenue from these projects (licensing, sale of services related to content, etc.)?
- Are you aware of any partnerships between project leaders and other units on campus (e.g., the library, IT, digital humanities groups)? If so, please describe these arrangements.

Impact and value

- What value do you see in supporting these projects? Is there any direct value to your institution?
- How do you or how would you measure the impact of these projects?

Key questions

- What institutional digital strategies are in place with respect to DH-like work?
- What do you believe to be the value of DH outputs and why does the university support them?
- Where and how are projects created on campus?
- Where on campus is support available to DH projects?
- What kinds of support are available on campus and how are those activities funded?

For library directors

(to be modified for directors of other units on campus)

Background

- What is your role at your institution?
- In what ways are you involved with digital humanities (DH) projects?
- What do you understand "digital humanities" to mean?

Library perspective

- Does your library have a digital content strategy? If so, what was the motivation for that strategy? What does it cover?
- How do you view the value of digital vs. more traditional holdings?
- Are there any library initiatives to develop unified solutions for supporting or enabling access to the digital humanities outputs at your institution?

- Do you have any concerns about the state of digital humanities projects in your library (e.g., sustainability, discovery)?

New DH project creation

- What types of digital humanities projects do you host at the library? Are these projects created internally? Externally?
- If there are internal projects, please describe in detail the process by which the library creates digital humanities projects: who initiates them; who makes decisions about them; etc.?
- If there are external projects, please describe in detail the process by which the library comes to support digital humanities projects: who initiates them; who makes decisions about them; etc.?
- Is there any internal funding for the creation of these projects? If so, about how much is this?
- At the creation stage, what is discussed concerning the ongoing aspirations and costs of the project? What agreements are made between the library and the project leader?

Ongoing support

- What factors determine whether you will provide ongoing assistance for an internal project? For an external project?
- What kinds of support does the library provide to these projects after they are created? (This may include management, scanning, metadata, website design/technical development, user outreach and support, usage analysis, preservation, editorial work, user tracking and needs analysis, and outreach.)
- Does the library budget for the ongoing support of these projects?
    - If so, about how much is this budget? Which activities are included in the budget (e.g., personnel, administration, overhead, technology infrastructure)?
    - If not, who does budget for them?
    - Where in the institution's budget does the ongoing financial support for these projects come from?
- Are you aware of any attempts to generate revenue from these projects (licensing, sale of services related to content, etc.)?

Value and impact

- What value is there in supporting these projects?
- Do you measure the impact of these projects (by use of user tracking, user needs analysis, awards, citations, etc.)?

Other institutional support

- Are you aware of any partnerships between project leaders and other units on campus (e.g., the museums, IT, digital humanities groups)? If so, please describe these arrangements.

Key questions

- How did the library become involved in DH work?
- Why is the library involved in supporting DH work?
- Who is involved in DH work at the library and how is it supported financially?
- How are projects created?
- What kinds of support does the library offer to projects?
- What does the library understand "sustainability" to mean and what are its sustainability concerns?

For digital humanities center directors

Background

- What is your role at your institution?
- In what ways are you involved with digital humanities (DH) projects? (As a PI? As a coordinator of activity? Other?)
- What do you understand "digital humanities" to mean?

Perspective of the DH center

- Does your DH center have a digital strategy? If so, what was the motivation for that strategy? What does it cover?
- How do you view the value of digital vs. more traditional research and teaching activities or outputs?
- What led to the development of your DH center? Who initiated it and why?
- What kinds of support does your institution offer the DH center (e.g., personnel, administration, overhead, technology infrastructure)?
- Does the DH center collaborate with any other entities on campus (the library, museums, IT, etc.)?
- Do you have any concerns about the state of digital humanities projects on your campus (e.g., sustainability, discovery)?

New DH project creation

- What types of digital humanities projects do you host at the DH center? Are these projects created internally? Externally?
- Are there projects on campus that the center does not host? If so, where are they located?
- If there are internal projects, please describe in detail the process by which the DH center creates digital humanities projects: Who initiates them? Who makes decisions about them? etc.
- If there are external projects, please describe in detail the process by which the DH center comes to support digital humanities projects: Who initiates them? Who makes decisions about them? etc.
- Is there any internal funding for the creation of these projects? If so, about how much is this?

- At the creation stage, what is discussed concerning the ongoing aspirations and costs of the project? What agreements are made between the DH center and the project leader?

Ongoing support

- What factors determine whether your center will provide ongoing assistance for an internal project? For an external project?
- What kinds of support does the DH center provide to DH projects after they are created (e.g., management, scanning, metadata, website design/technical development, user outreach and support, usage analysis, preservation, editorial, user tracking and needs analysis, outreach)?
- Does the center budget for the ongoing support of these projects?
  - If so, about how much is this budget? Which activities are included in the budget (e.g., personnel, administration, overhead, technology infrastructure)?
  - If not, who does budget for them?
  - Where in the institution's budget does the ongoing financial support for these projects come from?
- Are you aware of any attempts to generate revenue from these projects (licensing, sale of services related to content, etc.)?

Value and impact

- What value is there in supporting these projects at the center?
- Do you measure the impact of these projects (by use of user tracking, user needs analysis, awards, citations, etc.)?

Other institutional support

- Are you aware of any partnerships between project leaders and other units on campus (e.g., the library, the museums, IT)? If so, please describe these arrangements.

Key questions

- Why was the DH center created?
- What is the mission of the DH center?
- How is the DH center governed and supported financially?
- How are projects created?
- What kinds of support does the DH center offer to projects?
- What does the DH center understand "sustainability" to mean and what are itssustainability concerns?

For faculty project leaders

Project background

- Tell us about the project:
  - When and how was it started?
  - What subjects or topics does it cover?
  - What types of materials does the project include?
- Why was the project undertaken?
- What are the primary audiences for this project?

New project creation

- At the start of the project, how did you define the impact you wanted it to have? What resources did you expect would be required to fulfill that impact goal?
- Who at your institution did you consult (for advice, for permission or approval, etc.) as you were preparing to start the project? What guidance did you receive in developing your project (and your proposal)?
- What expectations did you have for host support when you began the project?
- Did your host institution have any expectations for your project?
- How was this project initially funded?
- Did the initial conditions of the internal approval, grant, etc. include specific host support for the creation of your project? If so, please describe that support
  - What form did those support agreements take? (Written contract, oral agreement, etc.?)
  - What forms of host support were included?
    - ☐ Planning
    - ☐ Project management/development
    - ☐ Content creation (e.g., digitization)
    - ☐ Tech support
    - ☐ Technical development (e.g., software, tool creation)
    - ☐ Preservation
    - ☐ Storage
    - ☐ Dissemination/promotion

Ongoing support

- Is the project complete? Or is it still being updated and developed?
- How would you describe the sustainability plan for your project?
- What role did administrators at your institution play in planning for post-launch sustainability?
- Is there any oversight of the project now? Is this by the same person/place that approved the grant?
- Is your project hosted on your campus?
  - If so, which unit/division/individual holds primary responsibility for it? Why is it hosted on your campus? Are there any benefits to hosting on your campus in terms of support, reputation by affiliation, etc.?

- If not, why not? Where is it hosted? Are there any benefits to hosting it off campus in terms of support, reputation by affiliation, etc.?
- What of the following activities/costs does the project incur right now?
  - Planning
  - Project management/development
  - Content creation (e.g., digitization)
  - Tech support
  - Technical development (e.g., software, tool creation)
  - Preservation
  - Storage
  - Dissemination/promotion

- How are those costs or activities covered (e.g., by grants, by your home institution, by donations)?
  - How have you been successful in the past in securing support?
  - Have you experimented with any revenue generation activities? If so, what activities are these, and to what extent have they been successful?
  - If your institution provides ongoing support, which costs are in-kind and which are direct? If so, what form did those agreements take? (Written contract, oral agreement, etc.?) Are you pleased with the types and levels of support you've received?
- What, if any, obstacles have you encountered?
- Are there other forms of support you need or you wish you could get? What improvements might you suggest to the current system?
- What is your perception of your university's place in the digital humanities landscape? Did that reputation in any way influence your choice to work here?
- Who "owns" your project, i.e., who holds the rights to your resource? What would happen to your project if you were to leave your university?

Impact and value

- What do you imagine the status of the project will be a few years from now?
- Why is this project valuable to others? To your host institution?
- Has your impact goal for the project changed? If so, how and why?
- What metrics do you use to measure and evaluate the impact your project has had?
- Has the project met its impact goal?
- How do you communicate the impact and value of your project to administrators or other higher-ups?

Key questions

- What are the chief aims of your project? Have they changed over time? What will they will be in the future?
- What types of up-front support—financial and otherwise—has the project received?

- What types of ongoing support is the project receiving?
- What are your chief sustainability concerns, and what would be needed to address them?
- Do you demonstrate the impact of the project to your university's administration, to your funder, etc.? If so, how?

Survey instrument

The following is a representation of the original survey instrument, which was disseminated using the Qualtrics platform.

Sustaining the Digital Humanities: Ithaka S+R Survey of Faculty Creation of Digital Content, Tools, and Infrastructure

Sustaining the Digital Humanities is an NEH-funded research project conducted by Ithaka S+R, a not-for-profit research and consulting organization based in New York whose work helps to guide institutions through the transformation of scholarship and teaching in an online environment. This study will assess the different strategies in place to sustain digital humanities–related work at universities in the United States, from solutions for preservation and storage to funding for ongoing operations and impact. This survey will help us develop a snapshot of the ways in which you and other faculty are creating digital humanities resources today and the types of support you currently require. Your responses will help colleges and universities understand how the academic community use, create, invest in, and plan for the long-term support of dynamic digital resources.

Background

1. In your research or teaching, have you engaged with digital technologies (e.g., software, databases)?

   - Yes
   - No

   If "No" is selected, then skip to end of the survey.

2. You may engage with the digital humanities in a variety of ways. You may play a significant role in the creation or the management of digital humanities resources or you may use digital humanities resources in your research and teaching. In what ways have you engaged with each of the following types of digital humanities resources? For the types of resources listed, please select all answers that apply to you.

	I have created or managed the following types of resources for my research or my teaching.	I have created or managed the following types of resources for my research or my teaching.	I have used the following types of resources in my teaching.	N/A
A collection of primary source digital content (e.g., an archive of digitized items)				
A collection of secondary source digital content (e.g., an online journal)				
Informal scholarly communications (e.g., a blog, a tweet)				
A digital platform (e.g., a wiki)				
Data produced using computational methods (e.g., topic modeling, text mining)				
A digital tool or software (e.g., GIS)				
Other (Please describe.)				

3. When you think about the top-priority digital resources you have created or managed, are they intended primarily for personal use (i.e., your own research project, materials for a class you teach) or are they intended primarily for public exposure and use (e.g., a large content collection, a crowdsourcing initiative, a digital tool available for download)?

	Intended primarily for personal use	Intended primarily for public use
A collection of primary source digital content (e.g., an archive of digitized items)		
A collection of secondary source digital content (e.g., an online journal)		
Informal scholarly communications (e.g., a blog, a tweet)		
A digital platform (e.g., a wiki)		
Data produced using computational methods (e.g., topic modeling, text mining)		
A digital tool or software (e.g., GIS)		
Other (text entry)		

4. When you think about the top-priority digital resources you have created or managed, what are your long-term expectations related to adding to or to maintaining these digital resources? For each of the following resources, please select all that apply.

	Intended primarily for personal use	Intended primarily for public use
A collection of primary source digital content (e.g., an archive of digitized items)		
A collection of secondary source digital content (e.g., an online journal)		
Informal scholarly communications (e.g., a blog, a tweet)		
A digital platform (e.g., a wiki)		
Data produced using computational methods (e.g., topic modeling, text mining)		
A digital tool or software (e.g., GIS)		
Other (text entry)		

Sustainability Strategies for Your Digital Resource

The following section asks you for more detail related to support for digital humanities activities on your campus. Please answer the following questions for one of the top-priority digital resources that you have created or that you manage.

Description of resource

5. Please provide the following information.

Name of digital resource _____

Resource URL (if applicable)_____

Launch year _____

Type of resource (e.g., digital content, digital tool or software, digital platform)

_____

Brief description of resource _____

Your role (e.g., PI, project manager, developer) _____

6. At what stage is your top-priority digital resource currently?

- I'm doing background research on the materials or technology I want to include in the resource.
- I'm building my resource (e.g., designing a program, creating a website).
- I'm managing, adding to, or enhancing a relatively developed resource.
- My resource is complete, and all the related data, software, etc. are stored for safekeeping.
- Other _____

7. Is your resource hosted at your own university or elsewhere?

- At my own university.
- Elsewhere. (Please say where and why it is hosted there.) _____
  If "Elsewhere" is selected, then skip to the end of the survey.

8. Which campus unit or department holds primary responsibility for your top-priority digital resource?

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.)_____
- Other (Please describe.) _____
- N/A

If "I have created or managed . . . " is not selected, then skip to the end of the survey.

9. Would you have been able to create this resource without the help of that campus unit or department?

- Yes
- No

Funding for the resource

10. What was the source or what were the sources of funding for the creation of your top-priority digital resource? Please select all sources of funding that apply.

- External grants
- Internal grants
- Library, IT, or other home institution support
- Earned income (e.g., via sponsorship, advertising, subscriptions)
- Donations or individual philanthropy
- Personal funds
- Other _____

11. What is the source or what are the sources of funding for the ongoing support of your digital resource? Please select all sources of funding that apply.

- External grants
- Internal grants
- Library, IT, or other home institution support
- Earned income (e.g., via sponsorship, advertising, subscriptions)
- Donations or individual philanthropy
- Personal funds
- Other _____
- N/A (My resource is still being created.)

12. Does your digital resource have a budget?

- Yes
- No

If "No" is selected, then skip to "Sources of institutional support."

Please provide your best estimate for the budget of your top-priority digital resource in the prior year.

_____

_____

Sources of institutional support

Universities provide support for digital resources in a variety of ways with the help of different campus units at various stages in the life cycle of those resources.

Planning

13. For the planning conducted for your top-priority digital resource, which campus units or departments provided or currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

  If "N/A" is selected, then skip to question 14a.

For each of the campus units or departments that provided or currently provide support for planning conducted for your digital resource, how was or is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Resource creation

14a. For the creation of content, including digitization, for your digital resource, which campus units or departments provided or currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

  If "N/A" is selected, then skip to question 14b.

For each of the campus units or departments that provided or currently provide support for creation of content, software, tools or for other programming for your digital resource, how was or is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

14b. For the creation of software or tools or for other programming for your digital resource, which campus units or departments provided or currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

If "N/A" is selected, then skip to question 15.

For each of the campus units or departments that provided or currently provide support for creation of software or tools or for other programming for your digital resource, how was or is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Storage

15. For the storage (i.e., server space) of your digital resource, which campus units or departments currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

  If "N/A" is selected, then skip to question 16a.

For each of the campus units or departments that currently provide support for storage of your digital resource, how is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Project management, development, and technical assistance

16a. For the project management or development of your digital resource, which campus units or departments currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

  If "N/A" is selected, then skip to question 16b.

For each of the campus units or departments that currently provide support for project management or development of your digital resource, how is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

16b. For the basic technical upkeep, including bug fixes, of your digital resource, which campus units or departments currently provide support? Please select each of the campus units and departments that applies.

- Library digital collections center
- Central IT unit
- Academic or instructional technology unit
- An academic department (Please specify.) _____
- A senior administrator's office (Please specify.) _____
- Other (Please describe.) _____
- N/A

  If "N/A" is selected, then skip to question 17.

For each of the campus units or departments that currently provide support for basic technical upkeep, including bug fixes, of your digital resource, how is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Preservation

17. For the preservation of your digital resource, which campus units or departments currently provide support? Please select each of the campus units and departments that applies.

- ☐ Library digital collections center
- ☐ Central IT unit
- ☐ Academic or instructional technology unit
- ☐ An academic department (Please specify.) _____
- ☐ A senior administrator's office (Please specify.) _____
- ☐ Other (Please describe.) _____
- ☐ N/A

  If "N/A" is selected, then skip to question 18.

For each of the campus units or departments that currently provide support for preservation of your digital resource, how is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Dissemination

18. For the dissemination, including marketing and promotion, of your digital resource, which campus units or departments currently provide support? Please select each of the campus units and departments that applies.

- ☐ Library digital collections center
- ☐ Central IT unit
- ☐ Academic or instructional technology unit
- ☐ An academic department (Please specify.) _____
- ☐ A senior administrator's office (Please specify.) _____
- ☐ Other (Please describe.) _____
- ☐ N/A

  If "N/A" is selected, then skip to "Assessment."

For each of the campus units or departments that currently provide support for dissemination, including marketing and promotion, of your digital resource, how is that support funded?

	Direct funding or cost-sharing	In-kind contributions	Other
Library digital collections center			
Central IT unit			
Academic or instructional technology unit			
[an academic department-text entry]			
[a senior administrator's office-text entry]			
[other-text entry]			

Assessment

19. Do you measure the usage or other impact metrics for your top-priority digital resource?

- Yes
- No

If "Yes" is selected, then skip to "What are the ways you measure. . . . "
If "No" is selected, then skip to "Revenue generation."

What are the ways you measure the usage or other impact metrics for your top-priority digital resource? Please provide the metrics you use and their related figures (e.g., 1,000 pageviews per specified time frame).

_____

_____

Revenue generation

20. When you think about the top-priority digital resource you have created or that you manage, what methods for generating revenue have you tried? Please select all the methods for generating revenue that apply.

- Licensing or selling content
- Advertising or sponsorships
- Sale of services related to content
- Consulting or advisory work
- Other methods _____ _____
- N/A (I have never tried to generate revenue from this resource.)

Challenges facing the resource

21. Please rank up to three of your biggest challenges to the long-term maintenance, enhancement, or preservation of your top-priority resource. Use the boxes below to rank from 1 to 3, where 1 equals the biggest challenge.

- Financial resources
- Technological capabilities and improvements
- Staff time
- Establishment or clarification of workflows or standards
- Tenure requirements
- Strategic plans for the future (e.g., what to digitize)
- Expertise of project staff
- Institutional culture
- Format and/or platform migration
- Management of internal and/or external partnerships
- Access and discovery
- Metadata creation and management
- Intellectual property rights and management
- Privacy and human subjects concerns
- Usefulness of project for others
- Other
- None

  If "None" is indicated, then skip to "Future of the resource."

22. For each of the three biggest challenges to the top-priority resource that you have created or that you manage, please describe in further detail.

Financial resources _____

Technological capabilities and improvements _____

Staff time _____

Establishment or clarification of workflows or standards _____

Tenure requirements _____

Strategic plans for the future (e.g., what to digitize) _____

Expertise of project staff _____

Institutional culture _____

Format and/or platform migration _____

Management of internal and/or external partnerships _____

Access and discovery _____

Metadata creation and management _____

Intellectual property rights and management _____

Privacy and human subjects concerns _____

Usefulness of project for others _____

[other-text entry] _____

23. What would be valuable in helping you with these challenges? Please describe in detail.

Financial resources _____

Technological capabilities and improvements _____

Staff time _____

Establishment or clarification of workflows or standards _____

Tenure requirements _____

Strategic plans for the future (e.g., what to digitize) _____

Expertise of project staff _____

Institutional culture _____

Format and/or platform migration _____

Management of internal and/or external partnerships _____

Access and discovery _____

Metadata creation and management _____

Intellectual property rights and management _____

Privacy and human subjects concerns _____

Usefulness of project for others _____

[other-text entry] _____

Future of the resource

24. What other types of support for your top-priority digital resource would you need to receive in order to achieve the goals you have set for this resource?

_____

_____

25. What other types of support for this digital resource do you want to receive in order to achieve the goals you have set for this resource?

_____

_____

26. May the Ithaka S+R research team contact you if they wish to learn more about your digital resource?

- Yes
- No

If "yes" was selected for question 26, display question 27.

27. Please provide the following contact information:

First name _____

Last name _____

Title _____

Primary departmental affiliation _____

Email address _____

Phone number ( ) _____

Thank you for participating in this important research study. The Ithaka S+R research team looks forward to learning from your responses and those of your peers. This study will offer important guidance to the academic community in understanding how institutional strategies support the needs of your digital humanities resources and scholarship. Please encourage your colleagues to participate before the survey closes. If you have any questions or comments, please feel free to contact the study's primary author, Nancy Maron, at nancy.maron@ithaka.org.

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