

A Framework for Library Support of Expansive Digital Publishing

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Introduction

By the late 1990s, digital publications like [Valley of the Shadow](#) had dramatically changed the world of humanities scholarship. Such online works became a favored means of communication among scholars because of their ability to reach broad and diverse audiences, weave together primary and secondary sources, and efficiently connect whole bodies of scholarly discourse. In response to these developments, university libraries invested heavily in staff and infrastructure; they hired web developers, publishing consultants, and technical editors. Promotion and tenure committees revised their standards to account for the special characteristics of digital humanities scholarship. University presses developed a digital publication peer review network and began to publish digital works along with traditional monographs and journals.

Actually, most of that didn't happen. On the one hand, scholars are enthusiastic about the potential of digital publishing, and libraries and presses have explored and invested in ways to support. But change has been slow and uneven. Producing digital scholarship is still difficult and risky, which can inhibit presses' willingness to publish it. While peer review networks emerged that provided reputable resources for evaluating and publishing digital works (e.g., [NINES for Nineteenth Century Literature](#)), their location outside of the traditional publishing system has limited their potential influence. Many scholarly societies have proposed guidelines for evaluating digital scholarship; yet promotion and tenure committees do not consistently consider digital scholarship as part of a faculty member's review portfolio. Libraries have invested in expertise, but not at the level needed to produce more than a handful of *ad hoc* publications per year.

There are good reasons why digital humanities publishing did not develop as quickly as it might have, and as many academic prognosticators predicted it would. The digital humanities themselves were, and in some ways still are, technically and methodologically experimental. Yet while research remains inherently experimental, in recent years digital

¹ We especially acknowledge and thank participants in our 2018 workshop at Duke, for actively engaging with these issues and offering thoughtful feedback on the preliminary draft of this report. A complete listing of workshop participants is included at the end of this report.

humanities technologies and methods have begun to mature, barriers to entry have lowered, and technical experimentation is evolving toward routinization.² Given these developments, we now find ourselves at a critical juncture, trying to identify how to encourage maturation in a way that promotes thoughtfulness about publishing practices and efficiency in their implementation.

This report aims to help libraries — working with a network of presses, humanities institutes, and foundations — embrace their role in this maturing space. More specifically, it aims to offer a set of considerations that can help libraries offer a cohesive framework of support for what we are calling “expansive digital publishing.”

What is expansive digital publishing? We use the term “expansive” to characterize online publications that challenge current systems and expectations of publishing, primarily because they push against and beyond the limits we typically use to successfully manage publications. These works are often undertaken by scholars at multiple institutions and in different fields; use many different technologies; have multiple scholarly outputs; grow over time; operate over the long-term or are multi-phase; aim to engage with multiple audiences; and, in general, use digital tools and methods to explore or enable scholarship that would be more difficult to achieve through traditional publishing.

Pointedly, we do not view expansive digital publishing as antagonistic to traditional publishing and scholarly communication (e.g., the production of scholarly works by university presses; the vetting and promotion of scholarship through scholarly journals). Rather, we observe that, in an effort to better avail themselves of the limitless potential of digital publishing, scholars are building and using works that, in many cases, fall outside the predictable (and efficient) categories that have traditionally helped creators receive credit for their work; publishers to reliably manufacture and market these works to those who need them; libraries to collect and provide access to these works; and researchers to discover scholarship that they can build upon and incorporate into their work.

Expansive digital publishing cannot be reduced to just “digital publishing,” though the affordances of digital publishing contribute considerably to expansiveness. Rather, our focus on expansiveness calls attention to the fact that the broader publishing ecosystem that we have been relying on, and that has been adapting incrementally to incorporate digital formats and publishing workflows (such as Highwire Press for online journals), does not yet accommodate works that arise or grow outside of that system — publications whose definition and growth is not contained at the outside by a publisher’s list, platform requirements, or other pre-defined limits that help make works discoverable and sustainable. In many cases, expansive digital publications lack a clear analog in traditional

² Routinization has been a more recent phenomenon. Digital humanities granting agencies typically prioritize innovation and experimentation, but this is starting to shift (e.g., NEH Office of Digital Humanities’ Digital Humanities Advancement Grants that support sustainability efforts).

publishing (an online version of a print journal; a text monograph published digitally) and instead appear to be an amalgam of multiple genres, added or adapted over time to address changes in the scholarship. Expansiveness is an acknowledgment of both the creativity and potential that drives scholarly innovation and the limited capacity of our current publishing systems to fully address their needs.

Why focus on these “expansive digital publications”? In our view, these publications embody many of the best characteristics of networked digital scholarship. They open new possibilities for engaging in conversation with a broad set of readers — both peer scholars and publics — and, simultaneously, revise and expand knowledge based on this engagement. Their multi-format, multi-audience, multi-output orientation makes publishing more like an ongoing, polyvocal scholarly discourse and less like a one-to-many imparting of fixed wisdom in a linear text that appears unambiguously at a single moment in time. Secondly, we believe others have already begun to address the challenges of digital publishing that have clear analogues or precedents in printed media. For example, digital scholarly editions and monographs have received significant attention. We aim to build on such work to untangle the knottier problems of expansive digital publishing.

Why use the term “publishing”? In the context of digital scholarship, we believe publishing remains important because of the traits that give meaning to the idea of scholarly publication: peer review, editing, design, readability, citability, wide dissemination, preservation, and the imprimatur of a publisher, which confirms that a community of experts have addressed these key attributes of scholarship and provided a sufficient degree of quality control. Furthermore, it's important for scholars to have their work recognized and rewarded as a significant contribution to knowledge -- whether within their field or beyond it, through the promotion and tenure process as well as in the more informal development of a positive reputation among peers. For digital publications to flourish, they must retain their expansive qualities and also embody these characteristics of existing scholarly publication.

Finally, why limit the scope of our study to the role of libraries? Libraries occupy pivotal niches within both the scholarly communications ecosystem and the university campus. Their institutional position gives them comparative advantage in building partnerships across campus units, university presses, and external vendors or organizations, and their staff expertise corresponds to many of the needs associated with expansive digital publishing. While some universities have humanities institutes or presses that may also meet those needs, most do not. But all have libraries. Libraries have the capacity to drive positive change in several dimensions of digital publishing, including infrastructure, resource allocation, assessment, and long-term sustainability.

Background & Principles

This project grew out of an effort to support a series of expansive publications at Duke University Libraries (see Figure 1). As we grappled with some of the challenges detailed below, we came to more clearly define and understand the broad scale of the challenges and the need to address them with collective input from across the academic community. With support from the Andrew W. Mellon Foundation, we invited a wide range of stakeholders in digital scholarly publishing³ to workshop these ideas and help us articulate and think through many of the problems outlined in this report. We augmented these discussions by interviewing other faculty, staff, and administrators. Additionally, we reviewed literature and existing practice in an attempt to develop a framework for the support of expansive digital publishing. The key areas of our exploration included *Planning; Resource Allocation; Discovery; Evaluation; and Preservation and Sustainability*.

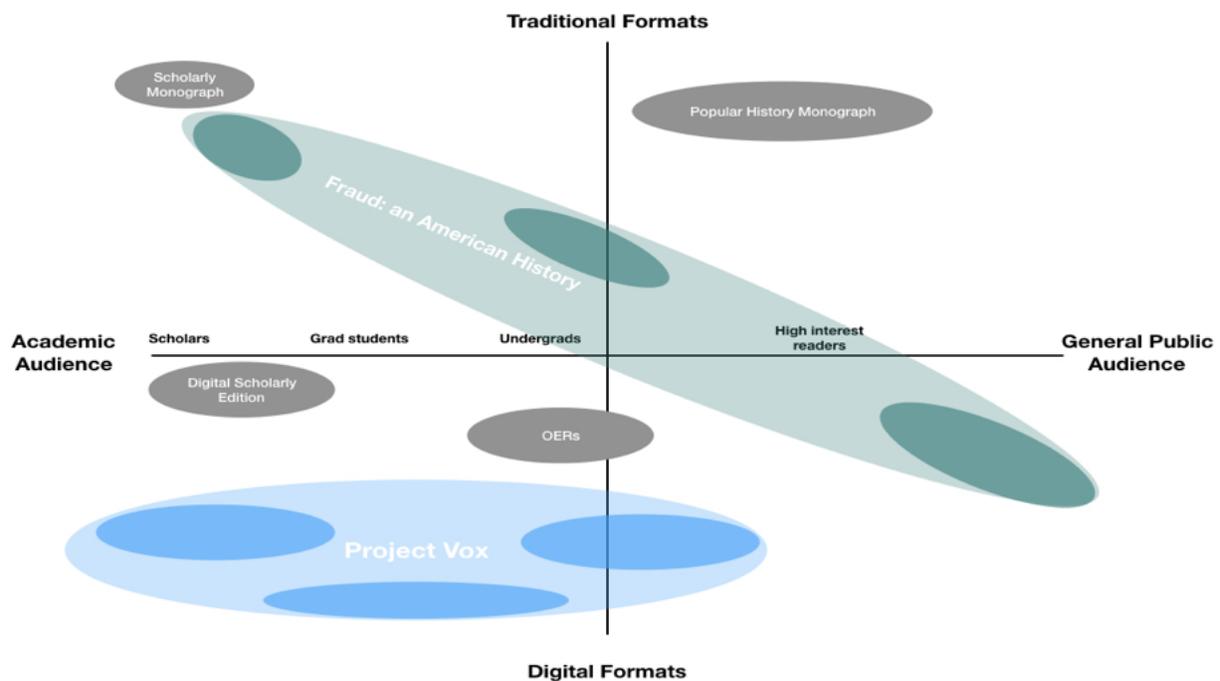


Figure 1: Diagram showing the ways in which two publications at Duke demonstrate two dimensions of expansiveness -- multiple audiences and formats -- and how these relate to more familiar scholarly genres.

³ Participants included faculty, library and university press staff, representatives of scholarly societies, university administrators, and technologists. We ultimately engaged with nearly 100 experts from around the United States and Canada, and several from other parts of the world. We did so through a two-day workshop at Duke University and group discussions at the Coalition for Networked Information and Library Publishing Forum.

In this report, we aim to share what we learned about each of these topics and to provide the beginning of a framework for universities--and libraries in particular--to improve their support for expansive digital publishing. This report is not meant to be a comprehensive review of the challenges and solutions. What we focus on are key issues as well as practices that have worked in other contexts, and we use those to suggest what library and external support might look like.

Assumptions and principles underlying report

We entered into this project with some assumptions or basic principles about scholarly publishing and digital project development, which we used to help develop questions for our interviews and session topics for our workshop:

Digital publication development is often opportunistic or reactive, rather than strategic.

Organizations supporting expansive publishing, and especially libraries, must be able to say “no” to certain proposals, partly because it’s impossible to do them all, but primarily because selection improves reputation. Selection should depend on clear processes and criteria. The latter should include quality and importance, of course, but may also include alignment with institutional priorities that facilitate concentration of resources and effort in areas where scholarship can make a significant impact.

Not all new scholarly ideas require entirely new approaches to expressing them. Scholars produce monographs through a process that involves many contributors beyond the author, and a given monograph passes through many hands, networks, and infrastructures as it makes its way from a press to an audience. Expansive digital publications must have similar networks — and, ideally, established pathways for traversing these networks — to avoid establishing new paths for each project.

Resources for developing expansive publications are often inadequate, uneven, and misaligned.

Publishing business models do not support expansive publishing publications. Scholarly publishers, such as university presses, have many of the skills and much of the expertise to support expansive publishing, but the financial and production models that they typically operate under make it difficult for them to undertake expansive projects that demand a different model. Expansive digital publications created to date have tended to use business models that are not based on subscription or sales revenue, in part because there aren't yet common established platforms for such diverse projects, and a marketplace that readers and

their proxy institutions can use to facilitate payment. Such projects also often span multiple platforms, and their goals often require them to be freely available in order to reach the broadest possible audience. For all these reasons, they typically seek to fund their development and operations through mission-based funding sources, rather than market-based revenue streams.

Libraries are better positioned to support expansive digital publishing, but not at scale. Libraries have planning and funding models that *could* support such publications and, increasingly, staffing and infrastructure necessary for this publishing work, though not yet at the scale of presses. This suggests both a potential for libraries to partner with presses more in order to provide scalable support for expansive digital publications, as well as a growing opportunity for libraries to develop new publishing services when publications do not align with a press's priorities.

Incentives and financial models should align with broadly useful infrastructure and support. Most financial support and rewards currently go toward well-established publishing models or innovative experiments. More resources are needed to support the translation of successful innovations into sustainable infrastructure and processes, or the provision of resources to those who establish useful templates and patterns rather than building one-offs.

Evaluation processes remain rooted in monograph culture.

Traditional scholarly publishing privileges the faculty author, with others who contribute to the work (editors, designers, technologists, etc.) receiving recognition for their "support" role, if at all. In expansive digital publishing, many kinds of expertise and effort shape the quality of any project in significant ways, and these contributions should receive appropriate rewards.

Publisher reputation is critically important in the current tenure and promotion process. If established and reputable publishers support expansive publishing models, these works will more quickly gain traction and acceptance.

As technology closes the gap between author and reader, the audience can play a greater role in how scholarship develops.

Engagement with readers and contributors is essential. In traditional publication models, the scholarly argument and subsequent discussions about it typically occur in a disconnected, often *ad hoc* fashion--whether in other peer-reviewed publications, the give-and-take at conferences, or now through social media platforms. New technologies make it possible to integrate these contexts, or at least more explicitly connect them, thereby

allowing richer and more informed exchanges. Expansive digital publishing should aim to foster these connections, and financial and infrastructure models should support them.

Reader experience must be considered in digital publication design. In some programs that support digital publishing, the balance of resources and effort implicitly favors the author's vision over the reader's experience. Support for expansive digital publishing should acknowledge the experience of potential audiences alongside the desires of the author.

For expansive digital publications to have scholarly relevance and long-term impact, they must be embedded in scholarly communities.

Scholarship exists in a network, not on its own. A scholarly monograph may look like a self-contained, standalone object, but it exists in and builds upon a network of scholarship, and it lays a foundation on which others will build. Similarly, expansive digital publications exist and grow within a context, which creators must keep in mind through all stages of planning and development.

Scholarly value, impact, and integrity is determined over time, by scholars. The values driving development of expansive digital publications arise from pedagogical and research questions, with measures of success concomitantly driven by how and whether those questions are answered (rather than by efficiencies of time and cost). Situating expansive digital publishing programs within scholarly environments provides the best way to ensure that they are guided by scholarly and academic values.

What follows in each of the five sections below is a summary of the key challenges we identified in each area, as well as recommendations about how libraries and universities can improve their support and reward structures for expansive digital publishing. Because many of the challenges we identify are system-wide, we also offer suggestions in each section on opportunities for partnership among institutions to collaborate together to help resolve those issues.

1. Planning for Expansive Digital Publications

Expansive digital publications are complex. They can span many years, audiences, formats, and technologies; they can involve many creators from multiple institutions. Furthermore, in contrast to traditional scholarship, the processes and responsibilities for creating such publications often lack clear roadmaps. This lack of clarity is particularly challenging as we attempt to "publish" these works in a meaningful way; there are typically open questions about which production processes belong to the scholar, the publisher, and other support

units (e.g., libraries, humanities institutes). Yet planning is critical if we expect expansive digital publications to have the attributes of accepted scholarship.

Challenges and approaches to planning expansive digital publications

Despite a strong consensus about the importance of project planning, we learned from our research, workshops, and interviews that good project planning often either doesn't happen or doesn't sufficiently guide decision-making. Why? We believe some of the most significant reasons why are:

Late-stage intervention. Because the publication has grown over time, scholars and teams may come to the library and other support units only when the project has become too large or complex for them to manage on their own. Significant (but possibly misguided) design and resource decisions have already been made at this point, which may frustrate attempts to adapt a project to existing workflows and platform requirements and make it more legible, discoverable, sustainable, and preservable.

Mistaking unique substance for unique process. Some challenges of expansive digital publishing arise because of misperceptions among stakeholders about the uniqueness of their publications. Workshop participants confirmed this widespread belief, noting that many creators — for whom digital projects tend to be a new experience — view all aspects of their projects as *sui generis*, including such activities as technology selection, design, project management, and preservation and sustainability. While many expansive digital publications do break new ground and deploy technology in new ways, regarding each project as distinctive means that most aspects of support remain non-scalable. Necessarily *ad hoc* and opportunistic, such publications often devote significant resources into creating (and recreating) standards, plans, and guidelines.⁴

Shifting goals and visions. Expansive digital publications often evolve over time: researcher plans may change, interests may fade, and individual involvement may wane or emerge in unexpected ways. Workshop participants noted that this instability means, among other things, that project creators sometimes add content that isn't well matched to the original structure of their project. This mismatch is a problem because infrastructure and organizations may not be able to evolve flexibly. And as the project expands in unanticipated directions, sometimes indefinitely, editorial oversight may not be sufficient (or even available) to manage the scope or quality of the work.

⁴ Some institutions have developed good workflows for handling ingest and planning. See <http://digitalscholarship.emory.edu/partner/projects/index.html>.

Library Support for Planning

In light of these challenges, how can libraries encourage good planning practices early in project development? Some strategies below will be familiar because they apply to digital project planning generally, but we believe they're critical for developing and ultimately publishing expansive digital publications.

Outreach and communication. Cultivating faculty awareness of relevant library services, as well as services offered by other campus units, helps to signal that expansive digital publications stand out as a distinctive category of publishing with special support needs. As mentioned above, many creators see their publications as one-of-a-kind and believe that few other scholars attempt such undertakings. For these creators, the assumption that universities have no systematic support structure for their work seems a logical conclusion. In fact, libraries and other support units regularly encounter these publications; they just need to do a better job of formalizing and communicating about the ways they work with them. For example, in addition to expansive digital publications as a general category, libraries should develop rubrics for subcategories of publications, with documented examples.⁵ Such a taxonomy would allow institutions to develop and communicate specific support structures around different publication types. Clear categorization also indicates that libraries know something about how publications will develop and, as a result, understand appropriate ways to support their success.

Libraries and other campus support units also need to coordinate their outreach efforts so that they achieve clear, coherent communication to faculty about the goals of their services. Working in concert to highlight sample publications and tools — and to connect these examples to specific services at different parts of the project lifecycle — helps to discourage the view of each project as a unique undertaking. By indicating that the university in general supports expansive digital publications, this kind of communication dispels some of the perceived risk of undertaking digital scholarship.

Finally, libraries should build relationships around digital publishing with other campus units. In particular, partnerships with humanities institutes/centers, offices of sponsored projects, and information technology divisions ensure that libraries become known points of contact for developing expansive digital publications — and have a seat at the table for discussions of university-level support.

⁵ See Katrina Fenlon. "Thematic Research Collections: Libraries and the Evolution of Alternative Digital Publishing in the Humanities." *Library Trends* 65, no. 4 (2017): 523-539. <https://muse.jhu.edu/> (accessed July 24, 2018).

Incentives. Libraries and universities can create incentives to drive good project planning that also takes into account the nature of expansive digital publications. For example, grants provide opportunities for awarding support, requiring cohort-based training, and inculcating compliance with local infrastructure and processes. Libraries and other campus units might award mini-grants (including both monetary and in-kind support) to incubate projects or facilitate planning meetings. For larger external grants funding expansive digital publications, tying project review to a requirement that PIs consult with appropriate campus units can help to encourage good planning, recognition of key infrastructure and staffing needs, and sustainable local support. Ideally, funding organizations could also encourage thoughtful planning by asking PIs for an explanation of how their work will engage with local or consortial support structures; this requirement could be analogous to the data management plans that are part of many grant applications.

Planning and guidance. Libraries can help streamline support and ensure scalability by creating tools or checklists to ensure best practices at all stages of project development, from proposal to preservation. Likewise, memoranda of understanding (MOUs) can be important tools for establishing expectations of support and preservation. For both checklists and MOUs, there are good examples that might suggest possibilities for the development of local resources, but it's important to tailor such materials to specific institutions.⁶ All institutions also need to appreciate the scope and use of the most sensible MOUs: they should clarify goals and formalize agreements among stakeholders, but they should follow from--not precede or establish--a relationship between creators and libraries.

Project selection and support tiers. No matter how well or poorly resourced, all institutions lack the capacity to handle all potential expansive digital publications. All institutions also need to appreciate the scope and use of the most sensible MOUs: they should clarify goals and formalize agreements among stakeholders, but they should follow from — not precede or establish — a relationship between creators and libraries.

Project selection and support tiers. No matter how well or poorly resourced, all institutions lack the capacity to handle all potential expansive digital publications. To distribute resources fairly and protect staff from overcommitment, libraries should clarify what *their* institutional goals are, and actively solicit publications and publishing projects that align with those goals. Like scholarly presses, libraries could maintain a “list” of subjects and methodologies in which they support expansive digital publishing. Lists might reflect many considerations, such as available technology and staff expertise, subject matter expertise, or desired outcomes — e.g., reaching K-12 or international audiences.

⁶ For example, see <http://digitalscholarship.emory.edu/partner/projects/index.html> and <https://rc.library.uta.edu/uta-ir/handle/10106/25646>.

This kind of selectivity creates an inherent tension with other key purposes of academic libraries. The service culture of libraries, combined with their mandate to support all researchers, means that any kind of selection process for a public-facing service may seem difficult to justify. One option may be to create and communicate tiers of service, in which all publications and publishing projects that clear some minimum threshold would receive *some* support, but libraries would direct the most significant investment of resources toward those aligned with local publishing goals and capabilities:⁷

- *Level 1*: basic consultation support at any stage of the project;
- *Level 2*: ongoing consultation and development, but no long-term commitment to hosting, support, or preservation by the library;
- *Level 3*: consultation, development, project management and long-term preservation and sustainability commitment within certain boundaries (e.g., for specific, well understood formats)

Opportunities for Partnership

Early in the planning stages, libraries should work with creators to identify publishing partners who make the most sense for a given project. This may include university presses, but also other organizations such as other university libraries, or humanities institutes/centers that are increasingly engaged in scholarly publishing. Creating such partnerships would require significant preliminary work to develop a network of publishers who are willing to engage on different types of expansive digital publishing, most likely because of their aligned disciplinary focus. That work is beyond the scope of what one institution can achieve, though more local versions could be created. For example, the Mellon-funded project [Publishing Without Walls](#) offers one model for a developmental pipeline for scholarship. Fostering those relationships at a national or international level would be difficult but highly valuable. We believe a joint clearinghouse should be developed to help libraries, humanities institutes, and presses identify publications of joint interest to pursue together.

2. Allocating Resources

Total levels of funding for expansive digital publishing is a critical question, but one likely to involve deeply idiosyncratic and local considerations that we cannot address here. Whatever the total amount devoted to publishing at a given institution, we start from the premise that all libraries and wider universities confront budget constraints, and so must

⁷ The model for tiered digital scholarship support developed by Jennifer Vinopal and Monica McCormick (2013) could be easily adapted to address digital publishing.

think carefully about how to allocate scarce resources. In the context of expansive digital publishing, that reality should compel libraries to ask hard questions about the resources required by proposed publications as well as the timing of funding needs, so that they can help these publications realize their potential without undercutting other important work. Yet the resource requirements for digital publishing often remain murky, complicating the process of deciding what projects to take on, how to assess short- and long-term resource needs, and how to determine appropriate levels of financial and staff support. Simultaneously, we need to understand and articulate the scholarly value of these publications in order to justify those costs.

Challenges and approaches to allocating resources

Far and away, the most significant challenge we identified in allocating resources for expansive digital publishing is not knowing what they actually cost. Our conversations with experts and practitioners helped explain why these costs are often opaque or unreported, and we arrived at some clear recommendations for better ways forward:

Encouraging transparency of cost, especially labor. Libraries and other units that underwrite expansive digital publications often do not fully know the resources that go into them. Routine contributions of labor, by librarians as well as scholars, do not require funding requests or effort reporting. In academic culture, where such activities as peer review, curating, mentoring, or networking constitute a normal part of one's work, this opacity is unsurprising. Workshop participants and interviewees noted insufficient tracking and reporting of time even from full-time staff tasked with this work.⁸ Unwillingness or inability to translate intellectual work into monetary equivalents may reflect resistance to a return-on-investment (ROI) mentality, in which publications must demonstrate immediate, visible impact in proportion to resource investment, regardless of their intellectual value or potential. It may also reflect a fear some workshop participants raised that once a publication's costs are fully tracked, it will be deemed too expensive to support. Yet without a clear accounting of the work involved in producing these publications, particularly the expertise and labor required, we undervalue the human contributions to their development and success and deprive ourselves of critical information necessary to plan for and support these projects.

Identifying values. Clearer communication about the *general* value of these publications, especially those that may take years to realize their potential, can help to discourage an ROI approach to funding and instead promote a *fund-to-mission* mindset. Evaluating impact and cost on per-publication basis misses the broader aims of expansive digital publishing, such

⁸ Maxwell et al (2017) noted that even in the well-established realm of scholarly monograph publishing, estimates of costs and resources involved varied widely. One constant was the high allocation of staff time as part of this process, particularly the editorial work of determining what works were worth pursuing.

as cultivating a more diverse scholarly community, changing the curriculum for a discipline, or defining a new area of research. These goals take more than a single publication or fiscal year to realize. Yet knowing actual costs is fundamental to building a sustainable approach to support and thus to fulfilling a loftier mission. The challenge, then, as articulated by workshop participants, is to both “lead with our *values* and our *value*.”

Saying “no.” A fund-to-mission mindset offers crucial assistance in addressing another challenge in allocating resources for expansive digital publishing: the lack of criteria defining which publications to support. Workshop participants noted that there is often a disinclination, particularly among libraries, to say “no” to requests for support. Perhaps this reflects libraries’ service orientation — all patrons must be helped — but it could also reflect a lack of strategic focus regarding what the library can (and wants to) take on. No institution can support all publications, particularly over a long period of time. Greater transparency around costs, and greater clarity about mission can help answer whether institutions should take on a given proposal or maintain funding for a evolving publication.

Allocating resources within libraries

The challenges described above offer some possible areas of focus for libraries wanting to support expansive digital publishing. Below, we outline a few solutions that libraries may be well positioned to implement.

Proposal process for start-up and development funding. A proposal process helps address the challenge of *what* to fund and can also help establish regular practices for documenting resources, disseminating lessons learned, and conducting peer reviews. With a clearly defined mission and set of strategic priorities driving this funding process, libraries can justify decisions to support exploration or development and, crucially, to decline projects that don’t align with their goals or resources. A proposal process for receiving start-up funds, in addition to providing a first round of peer review, helps set time and resource boundaries for establishing the project’s potential. Determinations about whether to continue development can go through a subsequent vetting process, which offers another opportunity for documenting effort, success, and lessons learned. Following the start-up phase, these projects may also have a better sense of resource needs.

Time for (and documentation of) staff’s work. Giving staff the freedom to contribute a percentage of their time to developing expansive digital publications can help them to expand their own skills and expertise, while also helping jumpstart new ideas. Sanctioning this time in exchange for more data on what staff’s work actually involves can further clarify and make visible the value they contribute, as well as the time that can be allotted in the future for similar work.

Consultation and training, including project planning and referrals. Platform and tool choice, team membership and development, and tracking and reporting outcomes can have tremendous resource implications over time, yet scholars and teams do not always recognize the need to carefully consider these dimensions of their publications at the outset. Consultations and training can help scholars better understand the needs of digital publications, plan for a publication's growth, and budget resources accordingly. For libraries, such services libraries provide a means to track, document, and communicate existing interest in publishing, which in turn can help them advocate for more institutional support. Consultation services may follow from and be justified by a mini-grants program that surfaces interest and helps build demand. Training, however, is a particularly important step towards better resource management overall: it helps more people do the work themselves and also raises awareness of the resources required.

Opportunities for partnerships

A number of recent projects funded by the Mellon Foundation have tested and demonstrated the potential for building publishing capacity through partnerships. Success in these endeavors depends on greater awareness of the actual costs involved as well as the value different contributors bring to the process.

Community-managed resources. Workshop participants recommended that universities seek out or build services developed through community mechanisms rather than exclusively by commercial vendors. A community of stakeholders who believe in the mission of an organization and the value of the work it supports, and who feel that they're part of a community, are more likely to continue to support the mission of the organization and to understand its value in relation to the costs. Conversely, in purely commercial vendor/client relationships where the interaction is primarily transactional and the emphasis is fundamentally financial, there is little room for exploration, and the vendor will seek primarily to maximize profit and the client to minimize costs. In this kind of relationship, core operating principles and values are more likely to be obscured.

Fee-for-service resource-sharing. Sharing services, however, introduces more variability than circulation of static resources. A fee-for-service model could be another way to leverage shared resources while explicitly acknowledging the costs (and value) that libraries bring to the publication process. Although libraries have not historically paid each other for services, the recently funded [Data Curation Network](#) may provide a test case for how such a model might work. In this initiative, the eight participating institutions contribute 5% of their own staff time for a data-curation consultation and support service, which any researcher at the member institutions can use. Making such a network a fee-for service system would require predictable, quantifiable workflows.

Differentiated roles and phases in digital publication development. Building capacity for expansive digital publishing requires us to recognize the different stages of “publishing.” In particular, we may need to re-inscribe the traditional view of publishing as a formal and vetted process. Doing so will help ensure that everyone in the scholarly communication ecosystem can better distinguish the work in earlier, pre-review stages from vetted, peer-reviewed content. For instance, at the University of Illinois at Urbana-Champaign, the library is working with scholars to publish interim work that may eventually transition into more formal, vetted publications produced by a press. Following a similar model, Libraries could play key intermediary roles: helping authors to develop ideas, with the flexibility to recommend and implement the form that best matches the goals of the project. In addition to helping authors implement and potentially demonstrate a work’s innovation, audience, and impact, the library can also help ready these works for a second phase of publication involving more peer-review and accreditation of the scholarship. In some cases one library could publish across all phases of the work, but in many others it will likely be desirable to partner with a second-phase publisher, such as a university press. Again, connecting incubated projects with publishing partners best positioned to take them to the next phase of development requires a communication network that does not currently exist.

3. Making Expansive Digital Publications Discoverable

If they cannot be easily located, referenced again later, and connected with other relevant scholarship, expansive digital publications easily become silos that fail to connect with existing scholarship and are not likely to have much impact in their fields. Discoverability in digital publishing is both paramount and complex, as digital scholarly publications are often aimed at multiple audiences and rely on both traditional and digital, scholarly and commercial, and human and machine apparatuses in order to reach those users. At present, the discoverability of expansive digital publications is characterized by gaps and loose ends.

Challenges and approaches to discoverability

Gaps in traditional scholarly communication. While traditional scholarship relies on online databases and reviews in journals and professional associations to help with diffusion and visibility, expansive digital publications lack comparable infrastructure. Some major journals, such as *The Journal of American History*, regularly review digital publications, but many do not. The scholarly practice of citation is another key component of improving discoverability: more citations lead to greater visibility for digital publications. Scholars who hesitate to cite digital publications further reduce the likelihood that these works will

be discovered through traditional means. Yet scholars are understandably reluctant to cite digital publications that do not possess a stable URL (and in some cases, may prefer to cite a print analog rather than risk link rot). It also may be unclear what, exactly, should be cited — the work itself? a subsection? — or how to point others directly to the idea or information that is referenced. Such challenges are compounded for expansive digital publications, whose components may change and migrate over time as the work matures.

Gaps in libraries' cataloging workflows. In addition to being underrepresented in scholarly literature, expansive digital publications rarely show up in library catalogs and registries. Interviewees for our study lamented that libraries are not well equipped to manage digital objects. “Unlike with a purchased physical book,” explained one interviewee, “there is no ‘trigger’ for getting scholarship on the open web into a cataloging workflow.” To carry that metaphor further, one might argue that there is no “barrel” either, to direct cataloging once the trigger is pulled. The fluid and open-ended quality of expansive digital publications makes them difficult to classify within existing genera and thus into appropriate cataloging channels.

Workshop participants also agreed that citation of digital publications remains a very thorny issue: scholars want a persistent identifier/locator (such as a DOI) in order to cite digital publications, but the creation of a unique identifier can also become a trap. “Should we assign DOIs or ARKs or ONIX metadata to everything to make them all citable and more discoverable?” posed one participant. “Therein madness lies. Some things may not deserve DOIs or ARKs because they may be too atomic and not worth it.”

Limitations of web-based and commercial discovery tools. Digital publications are unlikely to be found in the commercial indexes that libraries subscribe to. Discoverability services are often provided by content aggregators, who fund this service through sales commissions; open digital content breaks that model. Many workshop participants pointed out that while library catalogs and publication indexes still matter, they no longer serve as the starting points of discovery for many users (including scholars).⁹ We need to develop cataloging strategies that can make expansive digital publications discoverable on the open Web. For instance, describing content with open schemata, such as those expressed by Schema.org vocabularies, can improve machine discoverability beyond the library catalog using tools like Knowledge Graph.

Yet while our interviewees and workshop participants expressed strong agreement about the importance of integrating digital outputs into popular discovery tools, they also raised serious concerns about the difficulties this work entails. Users may treat platforms like

⁹ Ongoing research seeks to understand the audiences for digital projects, particularly in the digital humanities, and how they discover these works. For an introduction see Claire Warwick, Melissa M. Terras, and Julianne Nyhan (2012). Also, David Walsh, Paul Clough, and Jonathan Foster (2016) make a useful attempt to categorize users' typologies of digital cultural heritage materials.

Amazon and the Apple Store as discovery tools, but these platforms don't consider themselves as such. In order to be sufficiently “discoverable” through these channels (e.g. Portico, Amazon, Gobi), a digital publication must conform to criteria used for searching and browsing within that platform (e.g., price; deliverable format) and may also need to meet further requirements specific to the platform. Workshop participants also lamented that Google Scholar, in the words of one interviewee, “is much more trouble than it’s worth. They dictate to publishers how to design article pages; they won’t index you unless you follow very specific rules. Google Scholar has become a set of cuffs around our hands.” They also noted that Google Scholar is not stable or reliable, as it is subject to discontinuation as a service, just as with many other “free” web services.

Project creators’ approach to discoverability. Poor discoverability may also stem from shortsighted design. As indicated in some of our interviews, scholars planning expansive digital publications rarely consider how the audience will discover the work. One possible explanation for this oversight lies with the lack of incentives for considering discoverability. In some cases, review processes (for example, as part of grant funding) force consideration of audience at an early stage. In the absence of these external mechanisms, however, scholars have few prompts to plan early and carefully how to reach their target audience. To be fair, audience and design considerations are not typically the creator’s responsibility: in traditional publishing, scholars rely on existing infrastructure (e.g., publisher markets; library catalogs; journal reviews; citations) to connect their work with audiences. Even if they recognize that discoverability of expansive digital publications is an issue they must address, scholars have little experience or training to guide them.

Library support for discoverability

Our study points to several ways libraries can play a role in improving the discoverability of expansive digital publications while strengthening their credibility and worth.

Introduce “design thinking” in the planning process. By harnessing design thinking as a method that considers users’ needs, librarians can help creators integrate discoverability into the design of their publications from the outset.¹⁰ As part of this process, research services can help creators develop a clearer sense of their potential audiences, and consultants can help with planning effective use of metadata in order to maximize discoverability through existing platforms. Relatedly, this process could help to identify the unit(s) of discovery for the project and ensure that they contain stable and citable URLs. Here, again, training can be another key intervention, by helping creators employ design strategies that improve discoverability.

Leverage intermediary relationships. Libraries are substantial customers of the information intermediaries who contribute to the discoverability of conventional formats, so they could use

¹⁰ For an introduction to design thinking see Cross (2011).

their financial influence to encourage such services to make less familiar formats discoverable. For many libraries, the most significant obstacles to this approach would be internal: rethinking and better connecting the work of acquiring and providing access to content with the role of facilitating scholarly communication.

Make the research process discoverable. While the expansive digital publishing project exists primarily online, artifacts of its development may take more traditional forms (such as articles or conference presentations). Libraries can help authors document and demonstrate their research process, exposing the many steps and various components that often comprise an expansive digital project. In addition to increasing the likelihood of other scholars discovering these publications, these components can offer a behind-the-scenes look at how an expansive digital publication develops and can open new avenues for scholarly conversations.¹¹

Opportunities for partnerships

Toward a taxonomy for expansive digital publications. Libraries should foster a holistic dialogue amongst scholars, indexers, and cultural institutions (e.g., NISO) to define an overarching taxonomy for digital publications that can effectively describe the landscape of digital objects. This taxonomy can become the basis for developing functional descriptive metadata requirements that will lead to improved discoverability for individual digital publications.

Bridging the gap between publication creators and academic publishers. Libraries do not always find themselves in the best position to help creators increase the visibility of digital publications to a larger public. Indeed, academic libraries often focus on serving their home institutions rather than performing outreach beyond the immediate community. However, they typically have comparative advantages in connecting project creators to academic publishers, who possess the expertise to create marketing strategies intended to reach new audiences, and can serve as valuable partners.

Working with tool providers. Encouraging cooperation with programmers and tool designers was another theme that emerged during our workshop. Tool providers serve as essential collaborators in the search for better forms of citation in digital publications. By incorporating feedback from digital publication creators, libraries, and funders, programmers can develop better discoverability features for existing platforms as well as encourage better practices for improving discoverability and diffusion.

¹¹ Some workshop participants mentioned the [SHARE](#) project as a promising attempt in this direction.

4. Evaluating and Understanding Impact

Questions regarding an expansive digital publication's impact and value often arise in tenure or promotion reviews. The wider scholarly community, however, understands these publications in terms of how they contribute to relevant fields of inquiry. Remarkable or pivotal contributions in one field may be commonplace in another; evaluation of digital work, as for any scholarly product, depends crucially on scholarly context, whether disciplinary or interdisciplinary.

In the case of expansive digital publications, the scholarly community also needs processes for gauging a work's broader influence. Given their potential to engage audiences beyond the typical readership of scholarly books and journals, expansive digital publications require useful ways to capture this reach and impact. As other sections of this report describe, such assessment may also provide key data for decisions about funding, resource allocation, and long-term support.

Challenges and approaches to assessing impact

In order to address the challenges of evaluating expansive digital publications, we must clarify the intent of assessment: what purpose and audience does it serve?

- Highlighting a faculty member's effort as part of the promotion and tenure process
- Identifying how the publication contributes to a discipline or emerging junctures between or among disciplines
- Tracking the publication's influence more broadly, whether among the broad public or narrower constituencies, such as K-12 educators, teachers at the tertiary level, or even policy-makers/decision-makers
- Justifying a program or a project for continued funding
- Making visible the labor and other resources required for its production

Holistic evaluation of impact may involve all of the above (and more), and each of these concerns may implicate the others. Noting these different aims of assessment, however, calls attention to the fact that conversations about assessing expansive digital publications may unintentionally assume that the only use of assessment is to advance a scholar's career. Yet the nature of these projects — interdisciplinary, collaborative, resource-intensive, public-facing and public-engaging — means that there are multiple stakeholders keen to measure impact for different purposes. While this section will primarily consider assessment as part of tenure and promotion, it will bring these other considerations to bear on that process.

Whether to assess. As part of their process of development, expansive digital publications can go through multiple stages of review (e.g., various members of the project critiquing and contributing to a grant proposal; proposal review and acceptance as a condition of funding; community feedback on the digital work through blog posts, comment forums, and social media).¹² Before asking how to evaluate an expansive digital publication, we must first recognize and give weight to evaluations already conducted.

What to assess. Promotion and tenure committees have asked for, and scholars have voluntarily submitted, *précis* describing the scholarly value and impact of their digital work. Such documents assist committees with gauging the intellectual value of scholarly works while also allowing authors to direct attention to those salient aspects. Yet this approach risks undervaluing or ignoring entirely arguments inherent in the digital form. As has been argued elsewhere, a summary cannot substitute for evaluating a work in its original form.¹³

Lacking such a document, however, it may be difficult to discern a scholar's contribution to an expansive digital publication, particularly if it reflects extensive collaboration. Expansive publications can involve multiple people (e.g., graduate students, programmers or other technical experts, community collaborators); if later evaluators remain confused about the contributions of individuals on an expansive publication, they may shy away from assigning credit to any single scholar for the work.¹⁴ Arguably, evaluating an expansive digital publication in terms of a single individual's rewards works against the principles underlying such collaborations. Focusing exclusively on one individual's creative role may serve the current academic reward structure but does not reflect the scholarly values and aims that drove the work in the first place.

Who will assess. When review committees lack members who can effectively evaluate aspects of a digital work (e.g., data structure, user interface, codebase), they will likely under-appreciate or even overlook those features. This problem raises particular concerns when such components help move the academic field into new areas of inquiry. Including reviewers with appropriate expertise helps ensure that promotion processes accurately assess a given digital work.¹⁵

¹² See example of McKenzie Wark's 2006 book *GAM3R 7H30RY (Gamer Theory)*, initially published serially online to receive critiques and comments and so successful that it was eventually published by Harvard University Press in 2007, including many of the comments from the online forums.

¹³ See Rockwell (2011) and Presner *et al* (2012).

¹⁴ See Anderson and McPherson (2011) on improving assessment of collaborative humanities work. In STEM fields, the problem has been addressed by Project Credit, which defines 14 contribution roles, now adopted by organizations such as Public Library of Science, and institutions such as the University of Glasgow. See *CRedit*. Casari, n.d., <https://casrai.org/credit/>.

¹⁵ See Fitzpatrick (2011) on the importance of rethinking peer review, especially by focusing on reviewers who are able to accurately review the work and not just focusing upon impartiality.

How to assess. Fortunately, a number of scholarly societies have developed criteria for evaluating digital scholarship (e.g., MLA, AHA, CAA), thus helping creators and evaluators better communicate expectations about how these works will be assessed. Yet the nature of expansive projects requires an evaluative approach that also takes their distinctive aims and potential impacts into account, beyond disciplinary criteria. For example, while humanists increasingly recognize the potential of open-access digital publications to attract broad audiences, we have not codified methods for measuring those audiences and gauging impact, much less seen wide acceptance among those charged with evaluating scholarship in the promotion and tenure process. This is unfortunate since, through Web analytics and other alternative metrics of reception, digital publications can provide far more insights into readership, use, and impact than are possible with print.

Library support for evaluating and understanding impact

Here we offer a few low-barrier approaches to improving assessment of expansive digital works, ranging from early involvement in project planning to late-stage contributions.

Support promotion and tenure committees. In order to ensure that the promotion and tenure review process fairly evaluates digital scholarly work, libraries should look to establish relationships with the promotion and tenure committees and offer support with staff who are fluent in the technologies and publication types under consideration. This inclusion could also mean asking P&T committees to look outside their department and could involve librarians (particularly in cases where librarians hold faculty appointments), especially if they were part of the work's development and are able to provide more insight into how to evaluate the work and its impact.

Advising on metrics for evaluating impact. Libraries have a broad view of the publication landscape and can help scholars identify the generic qualities of their work and appropriate assessment methods. Through integration of discoverability tracking tools, and other basic tools such as Altmetric Explorer and web analytics, libraries can advise scholars on ways to assess the reach and impact of their publications and effectively communicate this evaluation to review committees. This advisement can be especially useful early in publication development, to help scholars ensure that their digital publication enables this assessment (e.g., through creation and consistent use of DOIs).

Helping to plan and document assessment as part of project development. Scholars working on expansive digital publications have identified the value of building in phases, with article writing and other forms of peer review as part of that phased work. As partners in planning expansive digital publications, libraries can help define the assessment strategies for critical phases of the project to help ensure that scholars collect the data necessary to document impact. As participants, they can help document key information

relevant to assessment (e.g., who worked on the publication and what they contributed; formal reviews of the publication at different stages of development).

Opportunities for partnerships

Digital publication peer review network. In addition to guidelines for promotion and tenure committees evaluating digital works, we also require external mechanisms for vetting and acknowledging the excellence and impact of expansive digital publications, such as the acquisition of such works by a university press. More libraries are playing a role in evaluating this scholarship, whether as part of library- or campus-wide programs for digital project development or as formal reviewers on tenure and promotion panels. As such, libraries can serve as key nodes in broader peer-review networks, alongside the presses that have provided and continue to provide this external credentialing function. Incorporating more incremental review for publications as they move from experiment to full-fledged publication, and building a broader review network of libraries, presses, and other organizations that can help better assess and document a work's sustained contribution to a field, could help pave the way for higher levels of credentialing (e.g., the acquisition of such works by a university press; the work's sustained support and development by libraries). Such a network would also help ensure that these publications are appropriately valued outside a scholar's home institution.

Liaise with presses to take incubated publications further. Assuming that libraries are willing to help incubate publications (as they have been doing for decades now), a better working relationship with presses would help to move expansive digital publications into a broader sphere of access. Establishing such relationships early in any publication's life cycle will help the press to sustain the project in partnership with the library and enable the richest forms of linking and discovery.

5. Preserving and Sustaining Digital Projects

Preservation and sustainability may seem like secondary concerns for expansive digital publishing. After all, these publications can evolve quickly and in unpredictable ways; they often appear to prioritize flexibility and agility over permanence; and their nontraditional elements can be difficult to capture for preservation. Yet these qualities are exactly why the preservation and sustainability of expansive digital publications require thoughtful planning and, in many cases, a willingness on the part of libraries to accommodate outputs that do not fit easily into existing workflows.

To be clear about the ways preservation and sustainability take shape for expansive digital publishing, we should first define these key terms. Our understanding of *preservation* aligns with the concise definition put forth by the National Digital Information Infrastructure and

Preservation Program (NDIIPP): "digital preservation is the active management of digital content over time to ensure ongoing access." Likewise, we understand *sustainability* as the qualities of a project that allow it to maintain vitality and relevance under conditions that differ from those in which the project was initiated. Sustainability may also refer to (or depend on) extrinsic factors that encourage this kind of persistence (e.g., library services). Indeed, both sustainability and preservation extend beyond technological properties. They are "socio-technical," for "they include concerns related to people, policies, communities, technologies, and financials."¹⁶ Across these various domains, the common goal of preservation and sustainability is to ensure the longevity and future accessibility of digital scholarship.

To cultivate this view among faculty and librarians, it's necessary to effect a cultural change in the way researchers view expansive digital publishing. If the scholarly community conceptualizes these projects as analogous not to a codex but to museum exhibits, for example, or the performing arts, then ephemerality becomes not an undesirable accident but an essential quality of the work. This configuration runs counter to a view of libraries as permanent repositories of information but, we feel, aligns with the evolving role of research libraries as collaborators in digital scholarship.

Challenges to Preservation and Sustainability

Because preservation and sustainability should be ongoing processes rather than reactive procedures at the end of a project's lifecycle, they encompass a number of interrelated problems, and those problems are themselves multidimensional (social, scholarly, and technological).

Who decides what to preserve? Does an institution have a rubric for determining the value of a project, or a documented process for assessing that value? Developing such a rubric is itself a key issue; it may encompass the separate but interrelated tasks of identifying and engaging stakeholders, achieving faculty buy-in, and ensuring transparency about the evaluation process. In a practical sense, these kinds of preservation and sustainability decisions may also need to correspond to institutional priorities and strengths (e.g., specific library collections), as well as inevitable resource constraints. Institutional priorities provide a legible rationale for triage or selection and help faculty understand why decision-makers choose to allocate resources to some publications and not others.

Should publications be ephemeral? At first glance, it would seem that preservation and sustainability is desirable for all digital scholarship. If the mission of a library is, in large part, to maintain a durable record of scholarship, then the library should find ways to

¹⁶ See Brian Keith and Laurie N. Taylor (2016) for these and other advisements in their curricular module on sustainability, developed as part of an Institute for Museum and Library Services grant to create a publishing curriculum for librarians.

sustain and preserve expansive digital publications, even when those projects consist of elements that do not articulate easily with local infrastructure or that resist traditional preservation workflows. We would argue, however, for a more flexible view: while many expansive digital publishing projects should enjoy both long-term sustainability and full preservation, decision-makers at libraries and archives should view other publications (or other components of a publication) as ephemeral by design.

A rubric or process for determining preservation status implies that institutions should not preserve or, for that matter, sustain, everything. Faculty, project team members, and support staff should agree on preservation plans, which may include an agreement that allows discontinuing maintenance or preservation support under certain conditions. Underlying this more flexible view of preservation and sustainability is a recognition that resources are always finite; decisions to devote significant resources to making works more permanent must be grounded in reality and balanced against the need for works to persist in some form if they are to be integral, durable parts of scholarly conversation.

Library Support for Preservation and Sustainability

Expansive digital publishing projects, because of their scope and complexity, invite both continuation and extension of existing library services around sustainability. At minimum, this support entails consultation with librarians and archivists regarding what preservation is desirable and possible. Following are a few opportunities for influencing the life of an expansive digital publishing project:

Consultation, education, and outreach. Much of the conversation about preservation and sustainability should take place at the beginning of projects, and subject librarians are well positioned to communicate with faculty about these issues. This kind of basic support could range in scope from individual consultations to regular instruction or workshops, depending on staff expertise and availability. Libraries might encourage professional development around issues of digital sustainability in order to meet emergent needs among researchers. They also might develop appropriate short-courses for doctoral students and faculty alike, to help further understanding of the unique preservation and sustainability issues inherent in expansive digital publishing and better plan for future access.

Leading periodic reviews of the project. Library staff might convene regular project reviews among contributors, PIs, and preservation staff to discuss how (or whether) to continue supporting a project; they might similarly convene faculty advisory committees (similar to the advisory group mentioned earlier as a way to help with planning) to provide scholarly input into the process. These reviews can also serve to clarify among all stakeholders which elements require preservation, which sustainability, or can be thoughtfully

Offering tiered preservation for expansive projects. Libraries might offer different levels of preservation to expansive digital publishing projects, depending on the technology, user community, and the enduring scholarly value of the project. For example, a basic level of preservation may include only screenshots of a project or a static version of a site, while a more complete type of preservation may include a comprehensive software stack to allow for a full recreation of the project and its user-facing components.

Opportunities for Partnership

Collaborating with others to ensure sustainability and preservation. Libraries occupy a central place in both the scholarly communications ecosystem and the university campus; they are ideally located to identify and cultivate potential collaborations with IT departments, presses, and other academic support staff. By working with faculty and IT staff, for example, librarians can help foster sustainability by ensuring that projects articulate well with local technology infrastructure. Ideally, these conversations will happen across institutions as well, so that there is consistent and shared practice for developing projects likely to be preservable.

Engaging the broader community of stakeholders around preservation and sustainability questions. Expansive digital publications are not just a "product"; they often include communities, workflows, and records of communication among project contributors. Because expansive DH publishing projects often involve many contributors, a collaborative development process, and a community of users, there is more to preserve (and sustain) than a single public-facing product. As a result, we need to think about how preservation will represent community and process. For this reason, a community outreach coordinator can be a crucial collaborator with library staff.

Conclusion

Ultimately, progress around expansive digital publishing relies on organizations developing infrastructures to support these processes and outcomes. This report is being written by people who work in university libraries, in collaboration with colleagues similarly situated in academic departments, support units, university presses, and other organizations within universities. Our primary goal is to understand how expansive digital publishing programs can exist, indeed flourish, in this context. We have accordingly presumed that situating these programs close to the home of scholars themselves provides the best way to ensure that they are guided by the values of scholars and their institutions.

Based on our investigations over the course of this project, we make the following recommendations and observations about how to develop an institutional framework for support of expansive publishing programs:

Phases of expansive digital publication development must be more clearly defined, documented, and connected to relevant funding and evaluation measures.

Because, by definition, expansive digital publishing is expected to grow and change over time, its development is better supported if it takes place over clearly defined and transparent phases. Subsequently, it is important for libraries and publishers to develop a shared vocabulary for understanding digital project publication over time. The different phases of activity would illustrate a continuum of traits, with processes, efforts, expertise, and funding reflecting the different needs and goals of those phases. Minimally, these development phases would include the following:

- **Investigation**
- Early stage efforts that don't imply a commitment to moving forward, but that do have the time and resources to explore new approaches. Criteria clearly defines fit between project and institutional mission. Similarly, clearly defined metrics help partners determine whether the project demonstrates progress toward or achievement of its goals.
- **Project**
- Mid-stage efforts toward clear goals with the resources to achieve them during a specified timeline, but not necessarily a commitment to long-term support. Such efforts typically follow a successful investigatory phase and involve additional rounds of review and assessment to ensure the project will move towards greater embedding in its scholarly milieu and will follow or help reify sustainable development pathways.
- **Publication**
- A work that carries all the traits typically associated with published scholarly works, e.g. selection for importance and quality, peer review, editorial oversight, citable units, expectation of longevity, wide availability, etc. At this point, the publication either moves into or is already embedded within a network of scholarship that helps to sustain its use and development over time.

This final category is especially important because it connects with existing reward structures, creating incentives for scholars to engage in expansive digital publishing. Scholars pay close attention to reputation and quality, and the cultivation of a reputation for

sustaining scholarship over time builds confidence that digital scholarly works will not be short-lived.

Libraries must play an early and ongoing role in developing expansive digital publications.

As brokers and providers of research materials for scholars, trainers and consultants for new approaches to research, and innovators and partners in creating, curating, disseminating, and preserving scholarship, libraries are the nexus of scholarly communication. They not only provide valuable perspective on how new scholarship and scholarly communication fit within this ecosystem, but they also play a critical role in ensuring new scholarship is legible, discoverable, and sustainable. At different institutions the extent of the library's role in expansive digital publication development will vary: for some institutions, the most appropriate role may be consulting with creators and facilitating their work with other groups (e.g., humanities institutes, publishers); for others, the library may take on the whole of the publishing enterprise, from initial acquisition and planning to final publication and dissemination. For many libraries, however, we believe the library should play a critical role in helping plan and create expansive digital publications, so that the entirety of that scholarship's lifespan is considered from the outset (e.g., how the work will integrate in networks of scholarship, demonstrate scholarly value, be discoverable and interpretable by its audiences, etc.).

Successful expansive digital publishing occurs across institutions.

Libraries in particular must connect their local efforts into the broader university ecosystem, so that they can support and receive support from others and so that their efforts integrate and interplay with the work of other institutions. Stand-alone publications are vulnerable to single points of failure and are more likely to become ephemeral. Integration within a network can help with sustainability.

While pivotal, the library's role in expansive digital publishing is also understood as complementary to the contributions of other nodes in the publishing network. It is unlikely that any one library, press, or center/institute will be able to handle all types of digital publications. A broad community of support for expansive digital publishing, created through partnerships between presses, libraries, and humanities centers/institutes, increases the ability for scholarship to follow pathways appropriate to its aims and needs and to receive necessary and sustainable support. Additionally, such partnerships enable better leveraging of resources and roles at different stages in a publication's development (e.g., providing a pipeline to presses whose publication of the work serves a valuable

credentialing role; or migrating a work to institutions or repositories providing a more robust preservation environment or scholarly context in which the work can be discovered and used over time).

Decisions to pursue expansive digital publishing must be driven by mission and values, not costs.

Understanding the workflows and true costs of emerging publishing models is key to running a sustainable, realistic program that compensates participants' efforts fairly. To do so, we must have a clear understanding of what the costs are for these publications, in terms of resources, expertise, effort, time, and dollars. Such clarity also helps reveal the actual contributions (and value) of organizations like libraries, who provide critical and frequently unaccounted for labor and resources for this work.

However, we may never begin or ever realize the impact of expansive digital publications if we start with (and never move past) projected costs. Rather, we must begin by defining for ourselves the values that underlie our organization's work and priorities, especially as those connect with the goals and values of our broader community. When projects connect clearly to these values, we must then make a case for these projects before outlining all the costs and processes. All projects have costs; tying funding to a clearly articulated mission helps ensure that at the end of the day, we have achieved broader impact and progress towards that mission, not merely efficiency.

These recommendations should be viewed as a package for achieving the goals outlined in the beginning of this report. It's not clear yet that doing all of these things in a cohesive way will themselves move scholarly publishing forward. But these are, we believe, important components of a forward-looking solution.

The ecological metaphor remains useful: by changing aspects of the scholarly publishing process incrementally and testing them without exposing the whole enterprise to risk, scholars and their institutions can help the ecosystem evolve. There are many pressures and precedents slowing this evolution, and this report aims to highlight some areas of opportunity where the scholarly community can circumvent these pressures, creating space for positive change.

We hope readers of this report will seize these opportunities. We hope, too, that they will share their successes and failures with the broader community, to help all of us learn and advance the state of scholarly publishing.

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