Digital Humanities Centers: Loci for Digital Scholarship

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Over the past decade, digital humanities centers (DHCs) have been a driving force in building an agenda for digital scholarship. An organizational entity that emerged in the 1980s, DHCs have dramatically increased in number with the expanded use of digital technology by humanities scholars. Today there are dozens of centers in U.S. universities and research institutes. Although DHCs vary in size and activities, and some have more robust funding, staffing, and scope than others, collectively they may be characterized as entities where new media and technologies are used for humanities-based research, teaching, and intellectual engagement and experimentation. Their goal is to further humanities scholarship, create new forms of knowledge, and explore technology's impact on humanities-based disciplines. In doing so, they offer scholars a unique environment for extending the boundaries of traditional research using digital technologies.

Our Cultural Commonwealth, the seminal 2006 American Council of Learned Societies (ACLS) report that cogently outlines the necessary components for a humanities and social studies cyberinfrastructure, calls for a network of national centers to provide environments that facilitate collaboration, support innovation, cultivate leadership, and encourage digital scholarship. In the absence of such a network, many of the independent, institutionally based DHCs have been working hard to provide such environments at the local level, allowing humanists to address important, nascent issues in digital scholarship.

What can we learn from the experience of DHCs as we look beyond independent, local efforts toward the creation of a network that supports large-scale work across the humanities?

Along with the notable achievements of DHCs, summarized in the pages that follow, come concerns that the proliferation of inde-

pendent centers is creating silos of activity and redundant resources. There are worries about the prodigious amounts of digital production created by DHCs that remain untethered to larger, community-wide resources and preservation efforts. And there is a sense that center-based research agendas are at odds with digital scholarship's increasing need for large-scale collaborative endeavors and resource integration across departmental, disciplinary, and geographic lines. As the centers mature and their numbers increase, these concerns raise questions about whether DHCs are inadvertently hindering the very research landscape they seek to advance.

This paper, which draws on a study conducted for the Council on Library and Information Resources (CLIR) (Zorich 2008), reviews key accomplishments of DHCs, while also identifying the limitations of current models for a national infrastructure.

The Current State of Play

A survey of 32 DHCs conducted for the CLIR study describes the nature and characteristics of these centers and their maturation from singular projects to multitiered programs. Survey results suggest that DHCs can be grouped into two general categories:

1. Center focused: Centers organized around a physical location, with many diverse projects, programs, and activities undertaken by faculty, researchers, and students, and that offer different resources to diverse audiences. Most centers operate under this model.
2. Resource focused: Centers organized around a primary resource, located in a virtual space, that serve a specific group of individuals. All programs and products flow from the resource, and individuals and institutions help sustain the resource by providing content, labor, or other support services.

Both types of centers have been hubs of activity and experimentation. They are the headquarters for a vast array of digital humanities projects, programs, and events, and they house many of the raw materials—the digital collections and archives—of digital scholarship. While there are increasing calls for shared resources and infrastructure at a level beyond what individual centers can provide, the collective achievements of the surveyed centers are noteworthy, particularly in the following areas.

Transforming humanities scholarship

A common foundation that underlies all DHC mission statements is the desire to transform humanities scholarship. DHCs envision a new type of humanist scholar, one who uses information technology to produce and disseminate humanities research in new ways and to new audiences. The centers have enabled scholars to explore the potential of new technologies to transform scholarship, and have used their many activities to demonstrate how this transformation can occur.

Promoting the enduring value of the humanities in an increasingly digital world

The principles that guide DHCs mirror time-honored beliefs in the humanities, such as faith in humanistic traditions, the importance of the liberal arts, and the conviction that the humanities have a vital contribution to make in the contemporary world. DHCs are promoting and defending these beliefs in the context of the digital domain. For example, the long-held humanistic tradition of open dialog and the free flow of ideas now must include strong support for a progressive intellectual property system that makes this possible in the digital realm. And the humanist mission of developing a citizenry of critical thinkers now must acknowledge the importance of visual and multimedia literacy to achieve this end.

Serving as "sandboxes" and idea incubators

Some DHCs offer a "sandbox"[1] for scholars to explore and test new ideas and technologies in an entrepreneurial environment: they can be a "zone of experimentation and innovation" for humanists.[2] When ideas developed in the sandbox look particularly promising, the centers play an "incubator" role, supporting the ideas and helping accelerate their implementation. In the United States, DHCs have been instrumental in nurturing experimental or experiential activities in digital art and performance, in the changing nature of literacy in a networked culture, and in the re-envisioning of the "publication" in a digital environment. Indeed, some of the most iconic digital humanities research projects, tools, and digital collections were conceived in DHCs.[3]

Eliminating boundaries and fostering interdisciplinarity

DHCs provide an environment where the boundaries of academic departments, disciplines, time, and location can be rendered inconsequential. They cut across the humanities, and the interstitial areas between the humanities, the social and natural sciences, the arts, and technology, to pursue their individual research agendas. Many centers create this climate in a "brick and mortar" environment by bringing scholars from different fields together in a physical location, but a small number also render it virtually, via a collaboratory model in which researchers and scholars pursue a research agenda in exclusively virtual environments.[4]

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1 A term borrowed from the software-development industry to describe a space where programmers can create new software functions and test their codes without risk to essential systems.

2 James O'Donnell, provost at Georgetown University, used this phrase at an ACLS Commission on Cyberinfrastructure Public Information Gathering session to describe an unquantifiable, albeit critical, aspect of digital humanities centers.

3 For example, *The Valley of the Shadow* project, developed at the Institute for Advanced Studies in the Humanities at the University of Virginia; Zotero, a research tool developed at the Center for History and New Media at George Mason University; and the *Willa Cather Archive*, developed at the Center for Digital Research in the Humanities at the University of Nebraska-Lincoln.

4 Cf. HASTAC (http://www.hastac.org/) or MERLOT (http://www.merlot.org/merlot/index.htm).

Extending audiences for humanities scholarship

By aggressively harnessing digital distribution channels, some DHCs strive to democratize and revitalize the humanities for diverse audiences. Their constituencies go beyond academe's triumvirate of researcher/scholar/student to include K–12 communities,[5] business and industry,[6] government and community groups,[7] and the general public. It is not unusual for a center to work with local schools to integrate digital history collections into classroom programs,[8] or to invite the general public to contribute content to a digital archive.[9] These and other efforts are extending the humanities to a wider range of audiences.

Engaging a broad community of professionals

DHCs recognize that digital scholarship requires the engagement of a broader network of professionals than does traditional scholarship. To that end, many DHCs have brought on board (as staff, consultants, or partners) an array of experts from many different fields. Librarians, archivists, and museum professionals, who have always played an important but understated role in overseeing scholarly research collections, may be sought out for their expertise in areas such as collections information management and metadata creation. Computer scientists and engineers are enlisted in efforts to develop computational tools for analyzing large data sets or creating data visualizations. Artists and performers, who are often pioneers in creating new forms of expression and interpretation, may be sought for projects that explore novel modes of interpretation and knowledge creation.

Providing a digital humanities training ground

DHCs have served as a de facto training ground for the next generation of digital humanities researchers and scholars. They not only offer conventional educational programs (courses, internships, seminars, and workshops) but also cultivate and nurture leaders in this arena through fellowships and residency programs. Their directors and senior staff mentor graduate and undergraduate students, as well as professionals in the early stages of their careers. Individuals who work and train in the centers are attractive candidates for digital humanities positions at other colleges and universities.

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[5] For example, *Civics Online*, a project of MATRIX—The Center for Humane Arts, Letters & Social Sciences to help K–12 teachers teach civics (http://www.civics-online.org/).

[6] See *Human Tech*, an affiliates program for industry offered by the Stanford Humanities Lab (http://www.stanford.edu/group/shl/cgi-bin/drupal/?q=node/1).

[7] See the *Scotts Run Writing Heritage Project*, an effort between the Center for Literary Computing at West Virginia University and the Scotts Run community to document the history of a community settlement house (http://www.as.wvu.edu/~srsh/).

[8] For example, the Center for Digital History at the University of Virginia incorporates digital history collections into Virginia's K–12 history curricula (http://www.vcdh.virginia.edu/index.php?page=VCDH).

[9] Consider, for example, what the Center for History and New Media did with its *September 11 Archive* and its *Hurricane Digital Memory Bank* projects (http://chnm.gmu.edu/collecting-and-exhibiting).

Realizing that humanities computing is an important skill, traditional humanities departments are adding digital humanities coursework to their degree requirements. Because these departments usually lack the resident expertise needed to develop and teach these courses, some rely on DHCs to assist them in this effort. In response, DHCs are creating new courses in digital scholarship and expanding existing offerings on the use of digital technology within specific humanities disciplines. As the demand for digital humanities training continues to grow, some DHCs, in concert with other academic departments, are developing formal degree programs in this area. They are also developing internships, residencies, and postdoctoral fellowships to round out their offerings.

Leading pedagogical innovation

Centers often are on the forefront of innovative teaching and instructional methods for learning in the humanities. They are building rich digital teaching environments (akin to what Stephen Murray has accomplished with *Mapping Gothic France*) and are teaching in virtual worlds. Some DHCs develop innovative techniques within a specific disciplinary area (for example, in the teaching of art, languages, or history) while others explore aspects of pedagogy in the digital arena (such as writing and literacy in new media environments).[10]

The success of DHCs in creatively using technologies for teaching and learning has been recognized beyond the humanities sphere. University administrators see the efforts of DHCs to incorporate digital humanities into liberal arts curricula as reinvigorating the humanities across the university. Educators recognize that DHCs are helping bring information literacy to undergraduate education. And teachers (from the higher education community through K–12) have praised the transformational learning experiences that DHCs bring to their classrooms.

Building collaborations

Digital humanities is an inherently collaborative endeavor, and DHCs have established many collaborations that promote scholarship and community building in various research areas. Collaborators include national and international partners from every imaginable community: higher education and K–12, community groups and cultural organizations, governmental and nongovernmental agencies, broadcast and print media, foundations and funding agencies, and more. Among these collaborators is an eclectic mix of professionals who have been brought into the research fold, such as information managers, engineers, and publishers.

Because of this bank of experience, many directors of DHCs are aware of the elements needed to ensure successful collaborations with diverse partners. However, their collaborative endeavors tend to be small and narrowly focused, addressing the attributes of

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[10] For examples, see the efforts of WIDE (Writing in Digital Environments) at http://www.wide.msu.edu/projects, and *Rome Reborn* (http://www.romereborn.virginia.edu/), a project at the Institute for Advanced Technology in the Humanities, University of Virginia.

partners and processes but not the nature of the collaborative work. Their parochial focus puts into question whether DHC collaborations can scale up to meet the complex management, interactions, and communications required for more broad-based, community-wide research needs.

Enhancing the scholarly research process

DHCs have developed an array of products that support and promote digital scholarship. The most visible of these are tools for publishing research and organizing and analyzing data. There have been unquestionable successes in this area (as evidenced by tools such as Zotero, Omeka, and Sophie[11]), but there are also concerns that DHC tools are inadequately leveraged across the humanities. Many tools are under-resourced, poorly maintained, and not widely known outside of a particular center. New efforts are under way to scrutinize DHC tool development and address some of these problems community-wide.[12]

DHCs also develop digital collections and resources (such as online repositories of learning materials or digital archives of humanities texts) that make the source materials of research more accessible for study and computational analysis. They create digital workspaces (such as wikis and blogs) and publication venues (e-journals and e-newsletters) for collaborating on projects and sharing news and research results, and they use virtual worlds to demonstrate artwork and performances. To distribute humanities resources more broadly, they develop products (such as virtual exhibits, podcasts, and Webcasts) designed to reach large audiences, and create special utilities (plug-ins, desktop versions of digital libraries, PDF documents) that allow research to be conducted on the scholar's local desktop. This rich array of digital resources is a double-edged sword: they provide the raw material for new research, but few DHCs have preservation plans and digital repositories to enable greater exposure and long-term access to these materials. Consequently, much of this digital production risks being orphaned, rendered obsolete, or limited to the environs of the particular DHC in which it was created.

On the programmatic side, DHCs have developed and fostered long-term efforts that incorporate many singular activities for the purposes of a larger scholarly objective. For example, they may sponsor complex projects and experiments that explore the use of three-dimensional modeling techniques for the re-creation of an archaeological site. Or they may work on multitiered programs to explore broader issues such as preserving virtual worlds. By developing or hosting programs (rather than one-off projects), DHCs commit long-term resources to various research areas. But here, too, the silo-like nature of DHCs poses a problem: the research agendas and activities of centers often overlap, resulting in redundant efforts and the unwise use of resources.

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11 See Zotero at http://www.zotero.org/; Omeka at http://omeka.org/; and Sophie at http://www.sophieproject.org/.

12 See Nguyen and Shilton 2008; and Project Bamboo at http://projectbamboo.org/.

Providing operational services to the scholarly community

One aspect of digital scholarship that receives scant consideration is the operational support that allows such scholarship to flourish. Because other campus units do not readily offer this support, DHCs have stepped in to fill the void.

DHCs' operational support comes in many forms. In the area of technical infrastructure, DHCs provide technology for scholars conducting field research, build and maintain hardware/software infrastructure for online communities, and design and create digital laboratory environments. They provide Internet services in the form of Web hosting, storage space, and site mirroring, and offer scholars and organizations server space for archiving inactive projects, workspaces, and image, audio, or video files.

DHCs also offer technical assistance and expertise in areas such as metadata encoding, digital resource design, statistical analysis, hardware/software support, media digitization, and technology prototyping. In the pedagogical arena, some centers train both new and established scholars in instructional design methods for humanities courses, and assist teachers with introducing curricula that incorporate technology into their classrooms. They also manage language lab facilities and new media classrooms.

Other forms of operational support come in the guise of management and administration services such as project planning, brokering services, office assistance, and grant administration. DHCs may also provide a temporary home base for related organizations and groups that have not yet secured an independent footing or are in a transitional state.

A less tangible mode of support comes in the form of advisory activity. Respected for their experience, DHC staff members are often asked to consult with academic, cultural, nonprofit, government, and corporate entities on a range of humanities and digitization issues. They are tapped by leaders in industry, government, and the media for their insights on national trends, current best practices, and particular high-profile projects. Funding agencies request their assistance with peer review of digital humanities projects, and academic tenure-and-promotion committees seek their advice when reviewing faculty members engaged in digital humanities research.

The Role of DHCs in Promoting Digital Scholarship

As noted earlier, the independent nature of DHCs has given rise to several concerns. These include overlapping agendas and activities, which create redundancies that inefficiently use scarce resources in the humanities community; the balkanization of DHCs from traditional humanities departments, to the detriment of humanities scholarship as a whole (SCI 2008, 14); and a lack of the large-scale, coordinated efforts needed to build a humanities cyberinfrastructure and address marquee research issues.

These concerns have led to a rethinking of the nature and form of DHCs and to discussions of how they can "complement each other and constitute a whole greater than the sum of its parts" (SCI 2008, 3). Scholars now are asking how centers can be positioned to bring about desired large-scale change that will transform teaching, research, and scholarship *across* the humanities. Some suggestions include aligning centers that have complementary strengths, and forming alliances between centers to fill knowledge gaps (SCI 2008, 3). The idea of regional or national centers has been proposed to leverage resources, cast a wider net of support for the community, and support large-scale collaborative projects (ACLS 2006, 35).

Whatever prospects are envisioned, the current landscape requires greater clarity about the roles for different types of centers (e.g., local, regional or national, resource based), as well as strategies for inclusion and interaction between them. It also requires consideration of the nature of collaborative work. A recent study of more than 200 scientific collaboratories suggests that large-scale collaborations are most successful when the work is easily divided into components rather than "tightly coupled" (Bos et al. 2004). Findings also show that collaborations organized around the sharing of data or tools are more successful than those organized around the sharing of knowledge, and that projects involving aggregation of resources are easier to develop than projects involving co-creation of resources (Bos et al. 2007). These findings suggest that with respect to promoting digital scholarship, the nature of the collaborative work is as important as the type of center where that work is conducted.

As scholars ponder how to promote digital scholarship in the humanities, many believe the term "digital scholarship" is destined for obsolescence. They argue that the distinction between "scholarship" and "digital scholarship" becomes meaningless as research and cultural production increasingly occur in a digital realm. A similar argument might be made about DHCs as distinct entities in the humanities landscape. While they now support new forms of scholarly creativity and production, they may become outmoded—viewed as places that helped bridge the divide between traditional and digital scholarship, or as precursors to a yet-to-be developed scholarly research environment (much like *Wunderkammern* are precursors of modern museums).

Whatever scenario evolves, today's DHCs are, individually and collectively, facing barriers such as siloing, redundancies, and non-integrated digital production that limit their effectiveness in meeting the current needs of digital scholarship. Nevertheless, they remain focal points in their respective institutions for digital humanities research and teaching, and have been critical in moving the process and products of scholarship into the digital arena. Their insights and expertise make them important voices in discussions on how to move digital scholarship forward.

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