

“Follow the Money?”: Funding and Digital Sustainability

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Abstract

This essay will explore the role of soft and hard funding in the digital humanities, with particular attention paid to the ways funding intersects with sustainability. It will discuss a variety of types of soft funding available from public, private, and institutional sources, and the ways the needs of funders can align with or compete with the desires of scholars. The availability and sustainability of funding as project needs change over time, along with funders' agendas, can influence project teams' decisions about the direction a project will take, who leads it, who can contribute to it, what technology supports it, on what servers it is hosted, if and when it can be updated, as well as if and where it will be preserved. Not considering the implications of financial support received can be detrimental to both the project and the researchers involved. Seeking funding should become part of wider strategies that enable the formation of mutually beneficial relationships, promising avenues of research, and sustainable revenue streams, rather than a time sink that explodes a project's scope in ways that undermine the project.

Humanities scholarship requires funding, whether for books or journals, database access or server space, research assistants or a trip to the archives, or simply a scholar's time to think and create. In the traditional book- and article-based humanistic workflows, colleges, universities, archives, special collections, publishers, and libraries have established labor and funding models that aim to support text-based research, writing, publishing, distribution, and preservation pipelines. But digital humanities (DH) projects don't fit neatly into these pipelines and digital humanists often struggle to work within these preexisting labor and funding models. While the differences between traditional and digital forms of humanities scholarship can cause funding difficulties at any stage of a DH project's lifecycle, these differences are particularly problematic when it comes to sustainability. 1

There are two common funding narratives often associated with DH projects in the United States. First, that DH projects are always grant-funded and that digital humanists are thus “cash cows” who bring in large amounts of external funding into an institution with projects that could be accomplished only due to those infusions of outside cash. And second, that the open-source, open-access, and collaborative ethos of DH makes it possible for scholars to do DH for “free,” without any institutional investments. Neither narrative is entirely false — and, indeed, the “free” project model is crucial for many contingent and independent scholars who lack institutional support — but not only do most DH projects exist somewhere on the spectrum between “free” and “fully funded,” but also each narrative obscures the financial realities that exist at those poles. 2

No DH project is ever free; even if no money changes hands, there are always real costs associated with the work.^[1] At minimum, a “free” DH project created by a single independent scholar with open-source software on their personal computer relies on the donated labor and resources of both that scholar and the community that created and shared the software. Larger DH projects with multiple collaborators rely on the donated labor and resources of all the project team members. If the project is web-facing, these donated resources may include real money for costs such as domain name registration or server space rental. Collaborators with access to institutional resources also effectively donate those resources to the project team on behalf of their institutions — from the costs of their salary and benefits, to hardware and software costs, to office space and utilities, to interlibrary loans and database access, and more. Some collaborators further involve their students as a source of “free” project labor — exchanging student labor for course credit in a model that 3

should involve significant additional labor from the instructor.^[2] As a funding model, then, the “free” project model is actually a self-funded or collaborator-funded project model.

When projects reach the limits of what can be accomplished for “free,” or are conceived of in such a way that they can’t even be attempted in such a model, one of the common next steps is for the project leaders to shift towards the other pole and seek grant funding — something that usually, though not always, requires institutional backing.^[3] US university and college administrators are particularly pleased when humanists join scientists and social scientists in bringing in outside funds to support both scholarly research and the overall operating costs of the institution. However, the grant application process itself has real costs, primarily in the form of the labor to write and submit the applications, which can take from days to weeks depending on how involved the application process is. Furthermore, most humanities grants are capped at a low dollar amount compared to other disciplines and funding ratios for both major *and* minor grants are also comparatively low. As of 2021, two of the major US grant opportunities that support digital project creation — the National Endowment for the Humanities (NEH) Digital Humanities Advancement Grants and Digital Projects for the Public — together fund a mere 30 projects a year, with a 14-15% funding ratio and maximum awards of \$400,000.^[4] On average, then, an institution should expect to submit 6-7 DH grants to the NEH to get one success, translating to tens of thousands of dollars of investment with no guarantee of a return. Grant writing is thus a resource-intensive gamble that doesn’t always pay off, especially for scholars playing outside a research-intensive institution who lack access to infrastructures designed to support grant writing and administration.^[5]

Each of these models has implications for project sustainability, here defined as keeping the project live on a server and accessible to members of the public through typing a URL into a browser. This is different from preserving a digital project or keeping the “bits” of the project safe somewhere — such as zipping up files and placing them into an institutional repository — even if they are not easily accessible.^[6] The sustainability of self-funded projects is reliant on team members continuing to invest their personal resources into — and generate internal team enthusiasm for — the project. If leadership and enthusiasm can be maintained, these projects have the potential to live on indefinitely. But this stream of donations can dry up at any time, at which point the project will begin to fall apart. Web-facing projects will even abruptly disappear at the first failure to renew server space rental or domain name registration.^[7] By contrast, grant-funded projects have pre-determined end dates; they can generally be relied upon to survive to that point, but afterwards no more funds will be forthcoming from the granting body. Unless the project team successfully finds a different source of funding to sustain the project — often in the form of new grant applications — it will begin to die slowly the day its grant funds run out.

While both funding models can work reasonably well for the traditional humanities research output of printed books, neither model is ideal to meet the sustainability requirements of digital projects. Both printed books and digital projects require a major initial investment, in time and research materials, to produce. But after the book is printed, it is no longer the creator’s responsibility. Instead, hundreds, thousands, or tens of thousands of effectively identical copies are scattered across the globe. And the upkeep costs are low for each individual copy placed on a scholar’s or a library’s bookshelves: once an appropriate space is set up to hold bookshelves, the marginal cost of each additional book added to those shelves is negligible until there is no more room and either collection items must be deaccessioned or the space must be expanded again.^[8] Barring a roof leak, mouse infestation, or careless coffee spills, the book may remain in good shape for decades without much if any active curation; indeed, most books survive best by being left alone.^[9] In the carefully controlled environments of a special collections vault, books can last centuries. And as long as at least one physical copy of a book survives, its scholarly contents survive as well. Books thus require an upfront, time-limited financial investment for production, after which point their survival is turned over to a distributed series of owners who pay a set infrastructural cost to sustain hundreds, thousands, or millions of these physical objects.

While digital technologies are all too new to know if any DH projects will last for centuries, right now most are struggling to even last years, much less decades [Davis 2019]. In stark contrast to books, digital projects are generally centralized to one copy, and they decay if they are not actively maintained.^[10] From a financial

perspective, sustaining a digital project is more akin to sustaining a car than a book.^[11] Like a newly-purchased car, DH projects tend to run well for five to seven years with minimal recurring costs for server space or domain name renewal, only to begin to suffer increasingly dramatic breakdowns that require equivalently hefty “mechanic’s bills” to fix.^[12] And after a decade or maybe two, both cars and DH projects reach a point where they either become too much trouble to be worth fixing or they reach “classic car” status and are deemed worth saving regardless of the costs.^[13] Unfortunately for digital humanists, book-based financial models falter and fail when faced with a “fleet” of digital objects whose costs are ongoing, increasing, and directly related to the number of objects that need to be sustained.

The first step for ensuring the financial sustainability of a digital project is thus to understand the technical construction — and associated maintenance costs — of complex digital objects and plan accordingly. Simply being able to accurately predict the ongoing costs of sustaining a website will help ensure that any funding plan is adequate to meet the project’s technical needs for its expected lifespan. A custom-coded phone “app” will be more difficult and expensive to sustain than a website based on an open-source content management system (CMS) such as WordPress, which in turn is more difficult and expensive than a website without an underlying database, such as a “flat” website built only with HTML, CSS, and JavaScript. If the predicted funding requirements of sustaining the project end up too high, then building — or planning to reduce a project upon its completion — to the minimum viable complexity will reduce the sustainability costs of the project to a more achievable level. Once a project’s needs have been identified, scholars can seek funding from a variety of diverse sources, prioritizing those that best fit the project.

Scholars associated with institutions can start by taking advantage of hard-funded institutional resources, such as specialized email addresses, listservs, or subdomains of their institutional domain, which have low marginal costs to the institution and are likely to be made available to employees who have a need for them. In institutions with more resources, IT services or the library might even supply shared server space for projects running a specific CMS, along with basic systems administration services such as keeping a WordPress installation and its plug-ins up to date. Hard funding and institutional inertia will help sustain projects built with such resources, so long as their creators remain associated with the institution, the projects continue to see active use, and nothing opens up the institution to legal or security threats — e.g. violating GDPR through listserv mis-management or using obsolete and vulnerable CMS plug-ins that open shared server spaces to hackers.^[14] And in the most well-resourced institutions, scholars may have access to student research assistants, course releases, or other research funds that can be deployed in support of digital project costs.

In addition to hard-funded resources, institutions can give scholars access to a variety of irregular — but still internal — funding sources. Research-intensive institutions often provide access to start-up funds and internal funding competitions for prototyping, with the implicit or explicit goal of leveraging those prototypes into external funding to further implement those projects. Some may even have internal, endowed prizes that could be sources of unrestricted funds; while they are rarely huge amounts of money, they may still be a significant source of project funds for humanities scholars who regularly apply for external grants as small as \$500 or \$1000 USD. But the biggest source of irregular institutional income by far is appropriations — money set aside for specific centers, departments, or projects — from friendly administrators who see the value in promoting DH on their campuses. While these funds sometimes “roll over” from year to year, the funds are more likely to be allocated on an annual basis, vanishing at the end of the budget year if not spent. These “use or lose” funds are good targets — especially for scholars with existing high-profile projects that need a brief bump in sustainability support, such as to pay for a CMS upgrade — because they must be spent down every year for the administrative unit in question to receive the same amount, or more, in their budget for the following years.^[15] The funds themselves come from a wide variety of sources, including tuition dollars, government appropriations for public institutions, endowment income for wealthier institutions, and grant overheads for research-intensive institutions.

Beyond institutional support there are, of course, external sources of financial resources. Digital humanists regularly participate in the grant economy, seeking funds from government agencies, foundations, not-for-profits, and corporations.^[16] Grants might seem like the optimal solution to digital humanists’ funding

problems, as they entail receiving funding for a specific length of time to generate a specific project, much as other humanists are funded to visit a specific archive or come under contract to write a specific book. A variety of funders offer grants of varying sizes for the creation of digital projects, which makes it possible to align a scholarly agenda with the agenda of those funders in order to create something mutually beneficial. Furthermore, grants come with numerous additional benefits, including a peer review process that helps to establish the digital project's scholarly value prior to the investment of significant time and money; built-in project publicity from the grant funding announcement; and institutional and external prestige for having won a grant.

However, the grant-funding ecology favors the sciences and is not always friendly to humanists. Anyone applying for grant funding in the humanities will quickly recognize there are a limited number of major funders — the US has the NEH and ACLS, and other nations have their own analogous funders — and most of them have limited funding available for specific projects. These grants are not always sufficient to complete, much less sustain, a project, which means scholars must create projects in stages and occasionally creatively re-envision the project. Scope creep — adding unnecessary features to make a project appealing to a new funder — is an ever-present danger that must be guarded against. Opportunities may also be limited by funder agendas. If a project could go two directions and only one is fundable, choosing that direction is not scope creep, but it is a lost opportunity. Similarly, institutional and funder requirements may limit team members' participation — insisting, for example, that team leaders have PhDs or be citizens of specific countries — and prohibit specific project activities, such as event catering. Funders also, quite reasonably, expect grantees to spend funds on the activities they agreed to fund; pivoting the project to new, unanticipated directions thus requires obtaining funder permission.

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But the biggest funding issue, from a sustainability perspective, is the fact that grant-funding is term limited. No matter if a grant is for one, three, five, or more years, there is always a planned end to the financial support. There are ways to avoid a hard cut-off of funds, for example by writing a pre-payment for hosting or other sustainability costs into the budget. Scholars should also become familiar with their institution's policies on grant overhead, a surcharge added to all direct grant expenses intended to support the general operating of the institution.^[17] A percentage of these funds often "trickles down" from the institution writ large through the scholar's various administrative units — e.g. some goes to the university for general operating expenses, some to the scholar's college, some to the scholar's department, and some to the scholar themselves. For scientists, these overhead funds often help support their lab infrastructure. For digital humanists, these overhead funds can be funneled back into a project to support its long-term sustainability. However, these funds can only extend grant support so far past the grant's end date.

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While there are no easy solutions to sustainability funding, the last decade has seen a growing sentiment that not everything needs to be free on the internet and that independent artists, writers, and other digital content creators should be paid for their work.^[18] Digital humanists can and should view themselves as digital content creators and pay attention to the business models "indies" use to support themselves. Not all these models will be appropriate to adopt — e.g. for scholars associated with an institution, a grant will bring more prestige and fit better into institutional workflows than a Kickstarter campaign — but an awareness of these models will help scholars creatively seek and acquire funding to create and sustain their projects.

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Any list of current indie business models is likely to age poorly, and it's less important to debate the benefits of Patreon vs. Kofi vs. BuyMeACoffee here than to note the existence of business models based on community support. Universities and other large institutions are accustomed to fundraising for large amounts of money, because it costs money to process donations and a \$1 USD donation might actually cost more to process than the donation itself. However, there are now and will likely continue to be a variety of platforms that support tip-jar-style microdonations of \$1, \$5, or even 10¢. There are also platforms that allow audience members to sponsor — or provide recurring donations to — creators, often in exchange for exclusive or early access to content. Freemium models — with a large amount of content available for free and additional content or services available for money — are also popular, and WordPress.com runs on this model; one can create a basic WordPress site on a WordPress.com subdomain for free, but it costs money to remove the advertisements and have a custom URL [WordPress.com n.d.]. The Mozilla Foundation — creators of Firefox — have similarly been exploring freemium models to reduce digital advertising and support user privacy.^[19]

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And while advertisements can annoy users and raise ethical considerations about advertised content, they are an established model for earning revenue on free content. Podcast advertising, in particular, is a growing market segment that podcasting scholars should be aware of [Interactive Advertising Bureau 2021]. Crucially, these are all models that often are effective for people or projects with robust pre-existing audiences, which is often a key factor in determining which digital projects in a person or institution's portfolio should be prioritized for sustainability funds.^[20]

With no one set path for financing their work, digital humanists need to use a variety of funding strategies across their digital projects' lifespans, optimizing strategies to fit a project's evolving needs. Strategies that work well during the creation phase of a project are often insufficient to sustain the project after its completion, when it needs to be actively maintained for continued public access. Digital humanists need to be flexible about seeking money for their work — both from within their institutions and outside of it — and pay attention to larger funding trends among independent digital content creators. But most importantly, digital humanists need to be clear-sighted about the real costs of their project, aware of their prospective future revenue streams, and proactive in minimizing the technical complexity of projects so that their future revenues are able to cover future costs. Digital humanists need to follow the money — not in the sense of continuously reimagining their scholarly agendas to fit those of funders, but rather in the sense of understanding their project's technical needs, the real costs of that work, and the various avenues available for funding their project at every life stage. Only then can they choose paths that accomplish their intellectual objectives in a fiscally sustainable manner.

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Notes

[1] I would like to thank the folks at the Nonprofit Finance Foundation, especially Robert Kagan and Cecil Daniels, for introducing me to the concept of real costs.

[2] I believe it *is* possible to incorporate work on active DH projects into for-credit courses, but only if the instructor is explicit about the conflicts of interest and prioritizes student learning outcomes over progress on the project. For a longer take on the ethical issues of using unpaid student labor on DH projects, see [Keralis 2018].

[3] It is common for grants to be awarded to institutions rather than individuals, making it impossible for independent scholars to even apply for those grants in the first place unless they find a collaborator at an institution to serve as their project's figurehead.

[4] Most of the grants awarded under these programs are for less than the maximum, especially as the advancement grants require matching funds to go above \$350,000. [National Endowment for the Humanities n.d.a]; [National Endowment for the Humanities n.d.b]. Overall, the NEH funds approximately 900 projects a year, across all subject domains, whereas the National Science Foundation funds a whopping 12,000 projects a year, with an average award of over \$400,000 and a funding ratio of 28% [National Endowment for the Humanities n.d.c]; [National Science Foundation n.d.].

[5] Even within a research-intensive institution, access to grant writing and grant administering infrastructure can vary dramatically, especially for scholars working in units without a history of receiving grants.

[6] For a book-based analogy: a sustained project is like a book on the open shelves of a library, whereas a preserved project is like one held in a special collections vault. See [Otis 2023].

[7] This is not a problem unique to DH projects. For more on the problem of link rot and disappearing websites see [Zittrain 2021] and Coble & Karlin in this issue.

[8] In addition to the sunk costs of creating such a space, there *are* costs to maintaining the space. However, these costs are effectively independent of the space's contents; adding a book or even 100 books to a bookshelf will have no measurable impact on the space's heating bill or property taxes.

[9] Note, however, that not all books share the same physical properties — a book printed on acidic paper will have a far shorter lifespan and need greater curation than one printed to modern archival standards [Goddard & Seeman 2020, 38].

[10] While diligent scholars may create numerous copies of their digital projects, and archive them in various places across the internet, these still pale in comparison to the number of physical objects printed in a single print run of a book. Furthermore, if these copies are not independently maintained, they are likely to face the same sustainability problems at the same time as links break (see Coble and Karlin in this issue), embedded content stops resolving, and outdated code leaves databases and servers open to hacking by malicious outside parties.

[11] No metaphor is perfect, including this one. There are absolutely times when a book-based metaphor makes more sense, such as when a junior scholar is trying to explain their digital project to a hiring or tenure committee. The car metaphor is specifically intended for discussions of the resources necessary to ensure digital projects' sustainability. See [Otis 2023] for my first use of the car metaphor.

[12] The average lifespan of a DH project is 5 years, which is about the same length as the extended warranty on a new car purchase [Meneses & Furuta 2019].

[13] The question of what projects to sustain and what projects to let decay or delete is a vexed one. While the intellectual merits of any particular project can be debated, there are some objective measures that can be used to assess them. These include the size of their userbase, whether they host unique or rare (born digital or digitized) cultural content, and whether they have been deemed prestigious by a scholarly community through, for example, citation as canonical works in a body of literature. These

intellectual merits can then be placed in conversation with an analysis of the difficulty of remediation, current security risks, and projected long-term sustainability costs. For an example of this triage process, see [Smithies et al. 2019].

[14] For more on the problem of “orphaned” projects that rely on institutional resources but no longer have an employee champion, see Cummings in this issue.

[15] Whenever possible, scholars should compile metrics on their projects that can be used to make a case for support to administrators. A project that is regularly featured in news outlets, has won awards, or receives hundreds of thousands of site visits a year will be more attractive to administrators than a project without a tangible track record.

[16] Corporations can also be a source of in-kind donations, especially data. Organizations with academic or teaching-centered business models — such as JSTOR, Gale, ProQuest, university presses, etc. — are often able and willing to provide data to scholars to help them achieve research goals. However, a more in-depth or long-term industry partnership is only likely if it eventually results in a monetizable product such as a subscription-only database or an educational resource that can be sold to teachers and students. While monetization can be good for sustainability — generating revenue that can be used to sustain the project itself — it may conflict with data-sharing agreements or field-wide expectations surrounding open access, and such arrangements should be approached carefully.

[17] While overhead is often a source of contention — especially when a third or half of a grant’s already limited funds are taken up by such charges — it is important to recognize that the work of digital scholars is still embodied. Outside of an institutional setting, they might have had to pay rent, utilities, and a myriad of other expenses that are not directly charged to them within a university setting. Overhead payments help cover these real costs. This is not to defend, for example, Harvard University’s current 69% overhead rate but rather to explain the general purpose of such funds [Harvard University n.d.].

[18] This can be best summarized by a common creators’ retort to offers of being “paid” in exposure: “people die of exposure.” See, for example, [Leckie 2013], [FC_Phillipa 2015], and [Lucas 2020].

[19] See for example [Mozilla Foundation n.d.], [Grant for the Web n.d.], and [Scire 2020].

[20] At the Roy Rosenzweig Center for History and New Media, we assign the highest priority to sustaining sites that receive over 100,000 unique visitors a year, whereas sites that receive less than 1,000 unique visitors a year are likely to be archived rather than sustained once their functionality begins to deteriorate. For sites in between, we look at the difficulty of remediation, security risks, intellectual merits, and project prestige to help assess whether sites that have begun to break should be remediated in their original format or flattened to static HTML/CSS/JS to ensure their sustainability with minimal additional investment of time or money.

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