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Findable, Impactful, Citable, Usable, Sustainable (FICUS): A Heuristic for Authors of Digital Publishing Projects

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Vision: That digital projects are fully integrated into the scholarly publishing ecosystem and are recognized and rewarded as first-class scholarly contributions.

Mission: Reduce risk for authors and increase the likelihood that digital projects are findable, impactful, citable, usable, and sustainable by providing a scaffold of critical guiding questions.

Frameworks & Projects That Have Fertilized FICUS

- [An Ethical Framework for Library Publishing, Version 1.0](#)
- [Access/ibility: Access and Usability for Digital Publishing](#)
- [DH Project Questions](#)
- [CRediT Contributor Roles Taxonomy](#)
- [FAIR Data Principles](#)
- [HuMetricsHSS Initiative](#)
- [NSDA Levels of Digital Preservation](#)
- [Socio-Technical Sustainability Roadmap](#)
- [Developing a Business Plan for Library Publishing](#)
- [A Framework for Support of Expansive Digital Publishing](#)

FICUS: A Checklist for Authors

Findable

This section helps authors answer the question: How findable is your project, both by humans and by machines?

Ask Yourself and/or the Project Team

- [ ] Does the project fit (disciplinary, subject, methodological) into an existing publishing venue, index, list, or aggregation?
- [ ] Who is responsible for promoting and publicizing the project, and what methods will be used to do so?
- [ ] Where does your target audience discover new scholarship?
- [ ] If your project is about a certain ethnic, racial, geographic, socioeconomic. group, etc. how will you ensure that those audiences know about it?
- [ ] Can users in other languages / countries / environments discover the project?
- [ ] What partnerships can you form or use to create awareness of the project?
- [ ] What venues review projects like this?
- [ ] Do you have an ORCID (http://orcid.org) and other persistent social media handles that will link you to the project once it is published?
- [ ] Are commercial search engine optimization techniques employed for the project?
- [ ] Does the project need to incorporate linked open data to enhance discovery and use, and how will you or your publisher provide for that?

Ask Your Librarian and/or Publisher

- [ ] What metadata needs to be created/maintained in order to register this project with the appropriate discovery systems?
- [ ] Does your metadata schema enable web-scale discovery? Specialty system discovery (e.g., library OPAC, DPLA, etc.)?
- [ ] What other persistent identifiers (work, object, media, personal) are relevant and/or useful to the project? (DOI, ORCID, ISSN, …. more?) Do those identifiers support the kinds of objects, media, work, persons involved in your project?
- [ ] Which of the following will the identifiers and registries provide (Note that not all are required, but you should consider which your project requires):
  - Unique ID
  - Persistent link
  - Associated metadata repository/registry
  - API access to the repository/registry to services (such as reference linking, reference lookup, interaction with other services—funder repositories, for example)
  - Identity disambiguation
  - Credit
- [ ] Is there a plan for maintaining the project's metadata in the identifier registries?

Impactful

This section answers the questions: Will your project have impact and how will it be assessed?

- ☐ Does this project fit with the broader goals of your academic research or teaching trajectory (e.g., scholarly/disciplinary focus, technology use, institutional mission/vision/goals)
- ☐ Will the project or its participants need or benefit from a scholarly assessment and validation process? (for validation, for tenure and promotion)
  - ○ What form of scholarly assessment and validation is most appropriate for the project? (pre-publication review, post-publication review, open review, anonymous review)
  - ○ Who is responsible for conducting the scholarly assessment and validation process? (e.g., the authors, the project team, the publisher)
  - ○ Will the project document its scholarly assessment and validation method?
  - ○ What do stakeholders need to know about the scholarly assessment and validation process for this project?
  - ○ At what stages of the project will it be subject to scholarly assessment and validation?
- ☐ Who is recognized as a contributor to the project and how is that recognition expressed (human readable, machine readable)?
- ☐ How will you design the project to ensure that all project partners' valued metrics are captured?
- ☐ How will you measure the success and impact of the project?
  - ○ How will use be measured (course adoption, inclusion in LibGuides, downloads, web traffic, time on page)?
  - ○ How will engagement be measured? (i.e., citations, blog posts, annotation, reviews, discussion in news media, assignments, community interest)
  - ○ How will impact be measured? (i.e., international reach, awards, inclusion in public policy documents, references in grant proposals, citations, inclusion in syllabi)
- ☐ Is the project designed such that the desired measurable outputs can be tracked?
- ☐ Is the project designed such that its various uses can be tracked and followed?

- ☐ Does this project fit your technological profile, either existing or aspirational?
- ☐ How will this project enable you as a publisher to broaden or deepen the scope of what you can offer?
- ☐ Does this project illustrate or demonstrate your values?
- ☐ Will you conduct scholarly assessment and valuation of the project, and if so, how will that be documented?
- ☐ How might you help us measure the project's use and impact?

Citable

This section answers the question: How, and in what forms, will your work be cited by other scholars? All of these questions might best be answered in consultation with a digital librarian.

- ☐ Given the nature of the project and its content, what is the unit of scholarly value that users will want to cite? (e.g., the entire project, pages/sections/units within the project, individual media assets within the project, etc.)
- ☐ Does the project have the markers of permanence (including persistent identifiers) that make scholars secure in citing it?
  - ○ If there is more than one citable unit, does each have a persistent identifier?
- ☐ Is integration with automatic citation generators desired or possible?
- ☐ How does project type/media/genre affect what's citable, the citation format that may be used, and the metadata required?
- ☐ If the project in its public form changes over time, what is the plan for maintaining citability?
- ☐ If the content is later edited or modified, how will you ensure that "version control" is reflected in the citation?

Usable

Usability is a more encompassing issue than the previous sets of questions, so we've broken it down into sections that each address different aspects of making your project usable. You will likely want to consult with a digital librarian on most of these sub-sections.

Audience

Answers the questions: Is your project internally coherent in regard to its intended audience? How does your intended audience drive your choices for technology, language, design, etc.? This section is not meant to address the entire rhetorical scope of how audience affects your digital project, but to address how audience and usability intersect in terms of creating sustainable projects.

- ☐ Who is/are the audience(s) for your project? Is the project's audience well-defined?
- ☐ How does the platform choice impact the potential audience's use of the project? (See also *Sustainable*)
- ☐ Is there interaction with the project? Will that interaction be public, in the form of community translations, annotations, comments, or contributions? Will they be instantly visible, or after moderation? If so, how will that mediation or moderation take place and who will do it? *(Sustainable)*
- ☐ Are you attempting to crowdsource any part of the project content? How? *(Sustainable)*
- ☐ Will the intended audience have the necessary technical expertise and affordances (e.g., infrastructural access)?
- ☐ Does the project discovery plan serve the intended audiences? (see *Findable*)

☐ Does your project's development plan allow for the discovery and accommodation of unexpected audiences? (see *Findable*)

☐ How will you determine that your project is reaching its intended audience, or recognize other audiences it is reaching?

Accessibility

Answers the question of who has access to your project, focusing on people with physical, geographic, and economic barriers to access.

☐ What is the accessibility testing plan? (timing, frequency, stakeholders, target compliance levels)

☐ Will the project be accessible on different devices?

☐ Who is included in usability testing and is that group inclusive of people of differing abilities and backgrounds?

☐ What statutory or institutional guidelines or requirements is the project subject to?

☐ How will the project's device and browser support impact the expected and unexpected audiences' access?

☐ How will the project's content, context, and structure allow or limit access outside of its geo-political and cultural context? (bandwidth, reliability, expense, language, software, graceful degradation, social accessibility/censorship)

☐ Does the project allow for effective, authentic access to critical stakeholder communities? (e.g., those whose work or communities are featured in the project)

Usability

This section answers the question of how usable your project will be to potential audiences. You may develop a usability testing plan in concert with your library or other publisher.

☐ What is your usability testing plan?

☐ Is access limited by IP/username & password/non-accessible platform/language? *(Sustainable)*

☐ Have you developed testers that mirror the project's audience?

☐ Will the project's content be understandable in either human or machine-readable ways when encountered outside of the designed application?

☐ Have the design and layout elements of the project been assessed for loss of meaning if they are removed, absent, or do not gracefully degrade? (see also *Accessibility*). For example:
  - o Will the text still function if a user views the project with their own style sheet?
  - o Is navigation available through multiple modal points (e.g., mouse, trackpad, keyboard, eye-tracker, etc.)?
  - o Do user interactivity features include feedback mechanisms, such as confirmation of response, indication of progress toward completion, time left to complete or timeout, etc.?

- Do all media assets (image, audio, video, etc.) have attached descriptors and proper structured text (e.g., transcripts, captions, descriptions, alt attributes, etc.)?
- Do users have control over how media assets are to be interacted with? (e.g., turning off auto-play on videos, etc.)? Do animated/moving assets avoid rapid refresh rates, blinking, pulsing, or quick movement of dots and narrow stripes?
- If color were removed, would the project's use be inhibited?

Intellectual Property & Use Rights

This section answers the questions: How does copyright and licensing work in and for your project and team members? Some answers may be dependent on your publishers' requirements as outlined in their author agreements, so you may need to address these questions in consultation with them.

- ☐ Will individuals keep copyright of their individual contributions? Will teams collectively share copyright to the outputs?
- ☐ What license will be applied to the project (all rights reserved; open license such as CC-BY, CC0, GNU, WTFPL, EUPL)?
- ☐ Will different licenses be applied to different parts of the project (metadata, software, data)?
- ☐ Are there institutional policies that may guide or constrain your licensing options?
- ☐ Will the license choice impact the project's eligibility for inclusion in relevant aggregations, indexes, or other third-party discovery systems?
- ☐ Does the licensing structure support the intended uses and appropriately restrict other uses?
- ☐ Is the license both machine and human readable?
- ☐ Does the project include works/assets that are under copyright or require a license to use?
- ☐ Are there licensing limitations (use, cost, format quality) that would negatively affect the usability, accessibility, sustainability, or impact of the project, either now or in the future?
- ☐ What materials fall under fair use? Public domain?
- ☐ How will copyright and credit be acknowledged or attributed in the project?
- ☐ What parts of your project are intended for reuse (content, data, platform, etc.)?
- ☐ What modes of technical re-use are intended? (replicable, consumable, portable)?
- ☐ How does the design and structure of the project allow for intended re-uses (e.g., package, zip file, Docker, Vagrant, GitHub, API, etc.)?
  - If the content layer (separate from the structure) is meant to be re-usable, how does the project accommodate that (e.g., APIs, OAI-PMH, data portability through structured content using json, XML, etc.)?
  - Are underlying systems essential to the project's re-use? (programming environments/languages, dependencies, software, hardware, operating systems, etc.)
- ☐ Does the project make use of descriptive standards that promote its re-use? (e.g., metadata schema, rational URLs, Persistent ID systems, etc.)?

- ☐ Will the programming or content language be a barrier to re-use for your intended audiences?
- ☐ How will the project prevent unauthorized reuse of restricted materials?
- ☐ How does the project's copyright status or license impact its reuse?

Sustainable

The Sustainability section relies heavily on the work of the Socio-Technological Sustainability Roadmap and the NDSA Levels of Preservation. This section answers the questions: What content do you have and what platform will you need? How will you work with these materials to make the project sustainable? What is the end-life of your project?

Platforms

Answers what kinds of questions are you asking to determine a platform given your content, audience, and tool availability, and how that platform will be maintained. A list of digital tools that have been used for DH projects is listed here, although the maintenance of the list is in question, as new platforms, technologies, and the like change rapidly:
https://digitalhumanities.berkeley.edu/resources/digital-research-tools-dirt-directory

- ☐ What is the project for? (Is it a house? A power tool? A community? An attic?)
- ☐ Is it meant for people (to use, view, act on, work with) or not (does it operate on things by itself)?
- ☐ Is the project static or dynamic?
- ☐ How will the project interact with people or other systems? Do either of these need to add to /alter the project? Does it need to maintain states?
- ☐ Do you need user management / proxy identities?
- ☐ Is there some skill/knowledge/ability required before one could engage this project? (programming language, disciplinary knowledge, technical affordance) Does the platform need to mediate that Knowledge, Skill, Ability (KSA)?
- ☐ What content types live in the platform? (data, images, text, software, video, audio, complex digital objects, metadata, a stream of content from somewhere else, something else)
- ☐ Does the system need to manage persistent identifiers for content? (See *Findable*)
- ☐ Is it meant to be open source or proprietary?
- ☐ What computing power is needed for the project? Is it resource intensive? (grid power, CPUs, memory use)
- ☐ How much digital space will this take? Will the project grow / shrink?
- ☐ Does the project need a human/s to manage data, software / hardware, development, workflows, users?
- ☐ How much institutional / ideological support and enthusiasm does the project have? Will the project die without you?

Preservation

Answers the question of how long your project needs to last and how it will be preserved.

- ☐ How long does the project need to last to serve its purpose?
- ☐ Does it need to remain usable/reusable?
    - o Is an analog, abstract, report, record or snapshot of the project sufficient for the long term?
- ☐ Are the systems/formats used in the project integral to the nature of the project, or could it be migrated to a new system/format if current systems become obsolete?
    - o Are the modalities migratable? Is the user interface integral to the project, or could it be reconceived?
    - o Will the formats of the project degrade physically? Is there a storage/migration solution for these formats if so?
    - o What systems also need to be preserved in order to ensure long-term viability of the project?
    - o Do you have access to the infrastructures necessary to preserve those systems?
- ☐ Is there sustainable funding earmarked specifically for preservation?
    - o How much?
    - o Will/can the project generate income? If so, is this income enough to solely sustain the project for its entire lifespan?
- ☐ Does the project have or need policies to describe the preservation intent (to protect it against commercial capture, commercialization, and/or disintegration)?
- ☐ How much digital space (GB/TB/PB?) does the project occupy?
    - o Is there a second, geographically separated digital place where that much space can be apportioned for a copy of the project?
    - o Has this space been budgeted for in a sustainability/funding plan?
- ☐ Can the storage/preservation versions of the project or its content be reliably reconstructed? How do you determine whether the data has degraded over time (checksums, etc.)
- ☐ How stable is the institution the project is connected to? Is it likely to last? Are there political considerations to the longevity of the project?
- ☐ Do natural, geophysical, or geopolitical realities threaten the long-term viability of the project?

Retirement

Answers the questions of how to plan for your project's digital afterlife.

- ☐ Once it goes live, is it finished/final/complete/closed to ongoing work *or*
- ☐ Is it intended to be developed/augmented/expanded continuously?
    - o How will you ensure that work continues? On what cycle?
    - o By what metric will you measure "fruitful" expansion?

- Will your publisher allow for ongoing work?
- How will you know when the project has realized all the value it can?
- Will there be periodic review of project value/viability? How often? By whom?

☐ How will you communicate the status of the project to users?

☐ What metrics will indicate that the project has reached the end of its lifespan?

☐ Is there a community that should be consulted with or communicated with about lifecycle events?

☐ When the project is at the end of its life, what constitutes adequate digital hospice? (how do you help this project degrade gracefully into that good night?)