

Extend. Expand. Exemplify.

The SGCI team continues to offer its services AND brings you a new Center of Excellence to Extend Access, Expand the Community, and Exemplify Good Practices for CI through Science Gateways.

Sustainability Blueprint Factory

Current Sustainability Challenges, Potential Solutions and Future Needs

September 19, 2024



NSF
awards
1547611
2231406



Overview

- Methodology & Definitions
- Persistent Challenges
- Solutions
- Next Steps

Methodology

2023 **Background research and interviewing**

2024 **Focus groups**

- Host-institution sustainability strategies (2)
- New “approaches” (1)
- Funders (to come)
- PIs (via survey)

2024-5 **White paper:** Outlining an agenda for addressing ongoing challenges.

Tools: Practical tools and guidance such as briefing papers, annotated reading list, and a “health check”

Definitions

Campus stakeholders – Whether OPSOs, a Research Computing or Digital Humanities Center, library digital collections, or other center or department on campus that is playing a role in addressing campus-wide efforts to support digital initiatives in all disciplines, including science gateways.

Science Gateways – a type of “digital initiative” or web-based platform(s) that allows large audiences of researchers, educators, students, and the public to access complex, expensive resources such as supercomputers, scientific instruments, and large data sets.

Sustainability – the suite of practices that defines a recurring cycle of financial and non-financial support, to fuel the growth and support of a major digital initiative (science gateway) for the long-term.

Persistent Challenges



Support remains decentralized

- Support for maintaining projects can be difficult, when “maintenance” is not as exciting as starting something new
- Some creation of centralized tech platforms (library services, paid services) that permit PIs to focus more on research and less on infrastructure
- Often still several places on campus (library, DH Center, OSPO, departments) where support is offered

“There's no one place that's mandated to coordinate them so it all just happens based on relationships and partnerships that we create informal groups and teams that we create.”

- Associate University Librarian for Digital Initiatives/Research University

Re-use popular in theory. In practice?

Re-use and building upon existing code

- Incentives still exist (funding \$) to have PIs create software (or elements of it) that might already exist elsewhere
- This is an area where the ethos and practical implementation of open source may be particularly helpful. The ethos of open source is a networked approach that builds upon the successes of others rather than reinventing the wheel. It encourages collaboration, and the practical use of open source code and platforms can make research and projects easier to reproduce and maintain.

“That idea of reuse is big and it comes into sustainability too. If there's a good program that exists, how do you write a grant to contribute to it or figure out how to join it rather than needing to stand up your own new thing through a grant or through something else.” - Researcher, Open Advocate & Founder

How to support professional staff?

Support for needed staff still an issue

- While the role of research engineer has emerged as a true professional path, that does not mean that overall digital projects are fully staffed up. Graduate students or junior level staff who move on to different projects frequently, and their knowledge doesn't get passed on
- PIs will often take on the work themselves, but it is usually on top of a variety of work they are already doing
- Staffing still often includes departmental or other staff from the host institution who may be willing to help but aren't an official part of the project and can be pulled away.
- Still rare to see a fully compensated "project director" doing this work full time.

"How do you honor people who maintain, how do you honor people who integrate, how do you honor people who synthesize, how do you honor people who repair...how do we honor and reward it in the same way that we order reward and honor other kinds of work and see it as valuable." - Director, Center for Transformational Play, CMU

Discovery and measuring value

Building and measuring value to users is an ongoing challenge.

- A crowded landscape of digital tools and portals can make it difficult to gain needed visibility.
- Demonstrating value of projects in order to gain support from funders as well as the administrations at their institutions.
- Institutions (and funders) must make choices about what to continue supporting and what to sunset though the decision is not always easy.

“We don't have good mechanisms to in essence say thank you this was interesting and it was important but its time has come and gone, and we need to figure out how to sunset this.”

- Associate Dean for Digital Infrastructure and Director, Open Source Programs Office/Research University

Solutions



Directions the Blueprint Factory will explore

Some broader directions for supporting digital infrastructure have emerged:

- **Open Source.** Necessary, if not sufficient
- **Open Processes.** Transparency, sharing as default.
- **Cross-institutional Collaborations.** A means of building broader support in at the earliest stages.
- **Shared infrastructure.** Approaches that offer platforms, services at scale, so that scholars to retain focus on scholarship.

Next Steps

October 2024

Funder interviews to explore perspectives on sustainability solutions and the persistent challenges faced by institutions and PIs.

November 2024

Drafting summary paper on this phase.