DIGITAL /NFRASTRUCTURE /NSIGHTS FUND

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RFP #3

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The D//F (Digital Infrastructure Insights Fund) is a multi-funder initiative sustaining a platform for researchers and practitioners to better understand how open digital infrastructure is built and deployed.
We´re creating a body of research and implementation insights that advance our goal to ensure a public commons of technology, sustainably developed and maintained, for the benefit of everyone.

Digital Infrastructure is a distinct area of focus that sits in intersection with a number of critical technology ecosystems like cybersecurity, data, and the internet. More insights are needed to distinguish how this digital public good (open code, policies and standards) and its creators can be supported best.

Our approach is interdisciplinary. Inter alia,

• we are looking for analyses on how underlying free and open-source software (FOSS) interacts with politics, sovereign responsibilities, diverse economic sectors, and the advancement of knowledge in the sciences and beyond.

• we aim to back the development of pertinent work that examines the convergence of open-source software and digital infrastructure with social movements focused on democracy, rights, justice, the environment, and scientific research

• we seek to investigate the issue of under-maintenance and occasional undermining of FOSS, as well as explore any geographical or other disparities within the communities responsible for providing and sustaining these software components amid evolving regulatory and socio-technical circumstances.

To pursue this agenda, the 2023 RFP invites new proposals to study the production, maintenance, governance and use of open digital infrastructure (further defined on p.3), looking at, but not limited to, the aspects listed below (p.4).

We believe that newly created knowledge can sometimes be best put into effect via pragmatic interventions like frameworks, policy work or strategic communications. Small-scale prototype implementations that translate prior research findings into practice are thus also invited next to original research, quantitative as well as qualitative methodologies.

Key Facts

Due Date Proposals: October 1st 2023

Application via: https://fordfoundation.forms.fm/2023-digital-infrastructure-rfp/forms/9724

Selection of successful projects completed: October 25th 2023

Research period must start: Between December ´23 and February ´24

Grant Amount: We seek to support proposals addressing a range of issues and different scopes that are in a ballpark between $50k – $125k for 6 - 12 months projects, managed via Open Collective (exceptions possible for 18 month-proposals)

Number of Grants: We expect to select a total number of ca. 7 projects from the RfP #3.

Further Opportunities: There will be a subsequent Open Call in early 2024. To stay updated about all D//F activities, please subscribe here: https://opencollective.us12.list-manage.com/subscribe?u=88fc8f0f3b646152f1cfe447a&id=f3df65ec27

Eligibility Criteria

• Individuals, Organizations (nonprofit and for-profit) as well as Academic Institutions are eligible.

• Individuals and Organizations based outside of the United States and Europe are especially encouraged to apply.

Open Digital Infrastructure - a Digital Public Good

The majority of code powering the Internet, creating operating systems or enabling application software to run is the result of the recombination of Open Source-infrastructure; like programming libraries, compilers or the implementations of open communication protocols. These components are created by individuals, volunteer communities, in research institutions and SMEs or other corporate environments.

Together, they form a foundation of free and public code that is designed to solve common challenges - firstly, in programming, but when applied, also to provide a multitude of core functions for society.

The benefits of open digital infrastructure, whether code, policy or standards, are numerous: it can reduce the cost of setting up new businesses, support data-driven discovery across research disciplines, enable complex but everyday technologies such as smartphones to talk to each other, and allow everyone to have access to important technical innovations like encryption that would otherwise be too expensive.

The production and governance of this common "toolset" is guided by standards, rules, decision-making procedures, and sanctioning mechanisms - and embedded in multiple large systems like the economy or law. Nadia Eghbal released a seminal report titled *"Roads and Bridges: The Unseen Labor Behind Our Digital Infrastructure"* in 2016 that described how the development and maintenance of digital infrastructure often favor specific corporate or government interests over the broad needs of the public. This can lead to significant risks to the open internet.

Collective action problems have been well-established over the course of research of the last 20 years, while f.i. the industrial organization of digital infrastructure was less well-understood.

In general, there is a growing need for specialized and updated knowledge about the production, sustainability and security of FOSS - Infrastructure from different actors, as reliance upon those digital components also grows.
Among the areas that could be addressed by such research & prototypes are:

- **Longevity & Sunsetting:** Open Source -Software Infrastructure Lifecycles, their social and technological underpinnings

- **Boundaries of Openness:** Ideological Foundations, political economies & applied challenges in FOSS

- **Open Source and its intersections** with emergent technologies, data pipelines etc.

- **Tech law and other regulatory considerations** for the long-term sustainability of digital infrastructure

- **Global Shifts & Localization:** Demographics and further narratives of maintainership

- Social, Material, Environmental (...) **Dimensions of Sustainability**

- Of individual activity, responsible consumption and institutional support: **Relationships between user-innovators, companies, academic institutions, & other entities in FOSS**

- The **Human Infrastructure in Digital Infrastructure**

- **Digital Public Goods & the Public Interest** - Context Analyses, economic/legal frameworks & applied practice

- **Sectoral Adoption & Usage of Open Source** from Basic Research to Field Work and Operations

- **Models & Measures:** Defining and Demonstrating f.i. Risk & Criticality in ODI

- **History & Ontologies:** Learning from Public Works and other large scale ecosystems for the custody and care of ODI

- **Legacy & Updates:** Bridging past and future paradigms of Software Development, Security and DevOps

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About the D//F and the Open Call #3

The D//F - Funders Circle (Ford Foundation, Alfred P. Sloan Foundation, Omidyar Network, Schmidt Futures and Open Collective) has a variety of strategies and priorities - but is united in our commitment to the creation of an equitable, sustainable and secure digital infrastructure, that is solidly grounded in the public interest.

In 2018 and 2020, the partnership published two RFPs that resulted in groundbreaking research and hands-on experiments to better understand the incentives and constraints that influence the maintenance of digital infrastructure.

Examples of Past Work

1

OSS as Digital Infrastructure: Legal Technologies & Institutional Design
The legal regimes governing the development and use of open source software (OSS) contribute significantly to the under-supply of critical digital infrastructure maintenance. The inherently global nature of digital infrastructure necessitates the creation of novel legal technologies and institutions, and poses distinctive opportunities and challenges for transnational open source software development communities.

2

Building International Open Source Communities
Studies of code repositories often suggest little open source activity originating in South Asia, yet regional communities continue to form around major projects. What is the nature of participation in open source software in these regional communities and what drives their formation? This ethnographic study centered on two regional open source communities in Dhaka, Bangladesh, a major Asian city with a growing information-technology sector.

3

Digital Infrastructure Incubator
Code for Science & Society's cohort program is designed to amplify the impact of research-based recommendations by providing tailored support for open source project leaders as they navigate governance-, sustainability-, and inclusion- challenges.

4

Mapping the co-production of digital infrastructure by peer projects and firms
This research demonstrates how firms are collaborating with communities of unpaid volunteers to produce open source code, used in most IT applications and infrastructures. It also shows how presentations about this kind of software co-production at open source conferences or in magazines reveal contrasting visions of digital infrastructure, business models, and the firm-community relationship.

5

The Visible and Invisible Work of Maintaining Free/ Open-Source Software
Maintainers of F/OSS projects don't just maintain software code in a traditional software engineering understanding of the term. They perform complex and interpersonal and organizational work to keep their projects operating as active communities of users and contributors. This study particularly focused on how this labor of maintaining and sustaining changes as projects and their software grow and scale across many dimensions.

All outcomes and descriptions of earlier cohorts are available here: https://digitalinfrastructure.fund/projects/

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digitalinfrastructure.fund