

Research Roadmap

About

This outlines the key research questions based on our Strategic Roadmap and their status. This is a living, breathing document of our work to outline our research objectives and key activities, and is subject to change.

Last Activity: 8/17/2022

Feel free to add comments to cards with constructive thoughts, questions, and other feedback.

Please refer to our [Contributing Guide](<https://hackmd.io/@investinopen/contributing-guide>) for more information on contributing.

Last Activity: 8/31/2022

Ongoing

Continuing questions we're exploring throughout our work as we learn and grow as an organisation

Last Activity: 8/15/2022

Articulate the value of open science

Resources

+ [UNESCO Recommendation on Open Science](<https://en.unesco.org/science-sustainable-future/open-science/recommendation>)

+ [How open science helps researchers succeed](<https://elifesciences.org/articles/16800>)

Last Activity: 8/17/2022

Map services in open infrastructure

Last Activity: 8/17/2022

Develop an understanding of key insights from nonprofit management research

Description

We want to know the state of the art in nonprofit management learning and research that applies to the development, management, governance, operations, and finances of nonprofits organizations that provide key services in support of research and scholarly communication.

Outcome

We will have an evidence-based approach grounded in reliable research into key best practices to the work of supporting service providers in building a reliable, resilient, responsive, and sustainable infrastructure of open services.

Last Activity: 8/17/2022

What practices, policies and procedures do we need to build out in order to achieve our mission?

Task

Identify the key practices, policies, and procedures that need to be built out for IOI to accomplish its mission and vision.

Outcome

IOI has an understanding of the key organizational structures that will enable its mission now and into the future.

Last Activity: 8/28/2022

Mar - June 2022 (Q4)

Finish our initial work understanding the space and our role in it and beginning the transition to taking positive action in the space

Last Activity: 8/15/2022

Our work defining the broad contours of the work will be completed and we will have clarity on key next steps

Last Activity: 8/15/2022

What are our aspirations as an organization?

Task

Leveraging the asset-framing approach, we will seek to define ourselves by what we aspire to be and the change we seek to create in the world.

Last Activity: 8/17/2022

What is the role IOI wishes to play?

Last Activity: 8/31/2022

What is our theory of change?

Resources

+ [Creating Your Theory of Change](<https://www.thinknpc.org/wp-content/uploads/2018/07/Creating-your-theory-of-change1.pdf>)

+ [How to Build a Theory of Change](<https://knowhow.ncvo.org.uk/how-to/how-to-build-a-theory-of-change>)

+ [Theory of Change examples](<https://www.theoryofchange.org/library/toc-examples/>)

Last Activity: 8/17/2022

Define our internal governance processes and procedures

Task

Develop our internal processes and procedures for governance based on available research and our own past experiences with governance in the space.

Last Activity: 8/31/2022

July - Sept 2022 (Q1)

Beginning the Change phase of our Strategic Roadmap by releasing products that start altering the conversation in the space in key areas

Last Activity: 8/15/2022

We will have completed our initial scoping and resource planning, engaged with key partners, and initiated work in key areas

Last Activity: 8/15/2022

What lessons can be drawn from utility sector funding?

Last Activity: 8/17/2022

What causes should we support?

Ideating on [Causes Brainstorm Trello board](<https://trello.com/b/2DA0e6oi/causes-brainstorm>)

Last Activity: 8/17/2022

What are the existing cost structures of open infrastructure services?

Task

Collect and organize data on expenses for infrastructure services to understand key trends to help drive investment.

Resources

+ [CostExplorer Master]

(https://docs.google.com/spreadsheets/d/1_B2WqQbcv8cS2mjLIGWR1gL0aj7Tya_vYwqCnDO1VAQ/edit?usp=sharing)

+ [COGR, FDP, and ARL: Putting Numbers Behind Institutional Expenses for Public Access to Research Data]

(<https://youtu.be/ptaMrSCzLII>)

+ Blog

(<https://investinopen.org/blog/costs-characteristics-oi-providers/>)

Last Activity: 8/31/2022

Understand and articulate the value of community for open infrastructure services

Last Activity: 8/22/2022

Explore and evaluate the existing funding for open infrastructure

Task

Explore the funding of open infrastructure services by collecting and organizing information on the money contributed to infrastructure services to determine key trends about who gets funded and where.

Documentation

- + [Exploring costs & characteristics of open infrastructure providers](<https://investinopen.org/blog/costs-characteristics-of-providers/>) (provides background on our selection of services initially)
- + [Funding open infrastructure: an overview of initial work](<https://investinopen.org/blog/funding-open-infrastructure-overview-of/>)
- + [Funding open infrastructure: key terms and concepts in our analysis](<https://investinopen.org/blog/funding-open-infrastructure-key-terms-and-concepts-in-our-analysis/>)
- + [Funding open infrastructure: A survey of available data sources](<https://investinopen.org/blog/funding-open-infrastructure-a-survey-of-available-data-sources/>)
- + [The costs of open infrastructure: conversations with providers, funders, and institutions](<https://investinopen.org/blog/the-costs-of-open-infrastructure-conversations-with-providers-funders-and-institutions/>)
- + [Funding data exploration: Work to date](<https://docs.google.com/document/d/1fPc-FQhknyoXfNkGH8jhrW9jHgN3sPkmqMB1RSU4kDo/edit#>) (an initial draft of findings that was the basis for the blogposts linked above)

Resources

- + [Funding Master](https://docs.google.com/spreadsheets/d/1ietuB7LYB1BYsYUo-JNJ_6nAltNhgDbApAhaGgkf35g/edit#gid=995392200)

Last Activity: 8/31/2022

Explore alternative/innovative funding mechanisms for infrastructure

Last Activity: 8/17/2022

Develop the COIs application for sharing information on open infrastructure services

Last Activity: 8/31/2022

Investigate and assess models for community-led governance

Research on community governance models.

Background

- [COPIM Model](<https://copim.pubpub.org/pub/wp4-report-exploring-models-for-community-governance/release/1>)
- [metagov](<https://metagov.org/>)

Goals

- Identify relevant fields of research (scholcomm, non-profit/charity, governance)
- Literature review on community governance models
- Select model that IOI endorses

Last Activity: 8/31/2022

What is the value of open infrastructure services?

Last Activity: 8/17/2022

Conduct listening/feedback sessions with interested stakeholders on the needs of open infrastructure services towards creating effective action plans for investment and capacity-building

Engage with providers, funders, and other interested and involved stakeholders to understand the challenges and co-develop solutions based on a deeper understanding of what a vibrant and sustainable ecosystem of services can and should look like.

Last Activity: 8/17/2022

What are the key gaps in providing reliable and sustainable open infrastructure services?

Last Activity: 8/31/2022

What funding models could be leveraged to better support open infrastructure services?

Task

Explore the range of innovative and non-standard funding models for their applicability to the funding of open infrastructure services with an emphasis on enduring, sustainable funding over time to facilitate long-range planning and investment in services that are dependable, reliable, and usable.

Outcome

IOI better understand the possible funding options to build a more sustainable infrastructure of open tools and technologies in the space.

Last Activity: 8/22/2022

What is a meaningful topology of open infrastructure services for funding analysis?

Task

Review the [available resources on projects]

(<https://docs.google.com/spreadsheets/d/1nat0mVPCITRVLZzBe0icmLb5gqab47v2lyHtUGCcCDg/edit#gid=0>) and identify the key topology of projects to prioritize for funding review

Last Activity: 8/31/2022

Oct - Dec 2022 (Q2)

Continuing the Change phase of our Strategic Roadmap by exploring alternative funding models and articulating a new future for funders in the IOI space

Last Activity: 8/15/2022

We have actionable insights to share with funders to help make their work more data-informed and coherent within a shared vision towards reliably funding IOI

Last Activity: 8/15/2022

Organize funders event to build shared understanding and catalyze collaborations and actions

Purpose

Bring together funding and IOIs closer together to start testing the work towards applied solutions to problems/challenges in funding.

Goals

- + Discuss the implementation of the financing feasibility study with a group of engaged and committed funders/stakeholders
- + Build consensus and cooperation between various interests

Outcomes

- + Funders are engaged and willing to participate in the funding explorations of IOI
- + Replicate the success of the Sovereign Tech Fund

Resources

- + [Interest survey responses](https://docs.google.com/spreadsheets/d/1JfZBtbE2A80kbfr45e1_EnsgDJhLEjLdM70mS3Zqhs8/edit?resourcekey#gid=1598380954)
- + Murals:
 - + [Event planning (IOI goals)] (<https://app.mural.co/t/investinopen8025/m/investinopen8025/1655467428575/c95ce8ef0a899f134140783e218604e4af6148fa?sender=u1fdcd8ea46d6665321488385>)
 - + [Persona](<https://app.mural.co/t/investinopen8025/r/165162490799800?folderUuid=4e8a214a-4fa4-4382-9a3e-461bbe31874b>), also [team retreat versions] (https://docs.google.com/presentation/d/1CcdN9n15KQaWJBmXvLjuTkGD7La6nco1DQQlse_VyHs/edit#slide=id.g130cd03bded_0_60)
- + [Theory of change from Collaborator Calls] (<https://app.mural.co/t/investinopen8025/m/investinopen8025/1655915958294/32b1045bfbb9b524c8aa59f8ae773942ba8c60ba?sender=u1fdcd8ea46d6665321488385>)

Last Activity: 8/22/2022

How can we assess risk in the space?

Last Activity: 8/17/2022

Examine models for for-profit / industry players to contribute financially towards shared needs and community reinvestment

Inspiration: [Anaconda Dividend](<https://www.anaconda.com/anaconda-dividend>) in the Jupyter Notebook space

Last Activity: 8/22/2022

Research cost-sharing measures for investment

Task

Research these as a viable way to meet needs such as legal defense, shared infrastructure, and other cost-sharing measures to reduce overhead for service providers.

Legal Defense Funds

- + <https://www.computerworld.com/article/2568389/osdl-members-fund-open-source-law-center.html>
- + [Unified Patents](<https://www.unifiedpatents.com/faq>)
- + [Open Innovation Network](<https://www.openinventionnetwork.com/>)
- + [Software Freedom Law Center](<https://softwarefreedom.org/>)

Last Activity: 8/17/2022

Explore notion of 'criticality' of open infrastructure/PIT services

Intent

Understand the criteria about discerning criticality in infrastructure.

Resources

- + [Funding Open Infrastructure Lille Notes](https://docs.google.com/document/d/1tUlc3uj1ZA-mDZZY4ISBY0FaFjTT_1nzZdXi6RVyKNO/edit#)

Last Activity: 8/17/2022

Better understand "sustainability" in the context of OI services

Purpose

Similar to what we did with `_transformative influence_` for openness.

Questions

- What are the key components of `_sustainability_`?

Key ideas

- + current financial health is not the same as sustainability

Resources

- + [It Takes a Village Sustainability Guidebook](<https://wiki.lyrasis.org/display/ITAV/It+Takes+a+Village+Guidebook>)

Last Activity: 8/17/2022

Governance outside the standard NP model, especially outside EU/NA

Last Activity: 8/22/2022

Better articulate the case for open infrastructure

Task

Describe the case for open infrastructure in research and scholarly communication in a clear, compelling way

Opportunities

Challenges

+ [Open Data and Ethnographic Research](<https://youtu.be/F8hXB1wCKqI>)

+ [Open Science and Intellectual Property Rights](<https://op.europa.eu/en/publication-detail/-/publication/42d27e04-b715-11ec-b6f4-01aa75ed71a1/language-en>)

Last Activity: 8/22/2022

What work is being done now for OA reporting and compliance?

Last Activity: 8/17/2022

Revisit key definitions, frameworks, and concepts for the work

Last Activity: 8/17/2022

Better understand why services fail

Examples

+ [Open Educational Resources World Map](<https://oerworldmap.wordpress.com/2022/03/22/goodbye-world/>)

Last Activity: 8/17/2022

Potential Future Work

We will build on our transformational work to drive more and better investment into open infrastructure so these services can become the default in research

Last Activity: 8/15/2022

Understand the role of open infrastructure in the pandemic response

Resources

- + [Preprinting the COVID-19 Pandemic](<https://www.biorxiv.org/content/10.1101/2020.05.22.111294v3>)
- + [Pandemic publishing: Medical journals strongly speed up their publication process for COVID-19] (<https://direct.mit.edu/qss/article/1/3/1056/96126/Pandemic-publishing-Medical-journals-strongly>)
- + [The normalization of preprints](<https://council.science/wp-content/uploads/2020/06/The-normalization-of-preprints.pdf>)
- + [ASAPbio Preprints and Rapid Communication of COVID-19 Research](<https://asapbio.org/preprints-and-covid-19>)
- + [The Rise of Preprints: How COVID-19 has transformed the way we publish and report on scientific research] (<https://www.universityaffairs.ca/features/feature-article/the-rise-of-preprints/>)
- + [Scholarly communication in times of crisis: The response of the scholarly communication system to the COVID-19 pandemic] (<https://doi.org/10.6084/m9.figshare.17125394.v1>)
- + (Forthcoming work from Wellcome Trust, Gates Foundation, and other funders flagged by [Ludo Waltman] (https://docs.google.com/document/d/1N-l6cm_dREO-tbDMmQV1jA1l8ZHlWmNz8w2fnoeHVo/edit#))
- + [Open Access assessment for monographs](<https://aupresses.org/news/neh-grant-to-study-open-access-impact/>)

Organizations

- + [Hathi Trust](<https://www.hathitrust.org/>)
- + [PREreview](<https://prereview.org/>)

Last Activity: 8/24/2022

Research open source software analogs and learning for open infrastructure

Organizations

- + [Apache Software Foundation](<https://www.apache.org/>)
- + [Linux Foundation](<https://www.linuxfoundation.org/>)
- + [Eclipse Foundation](<https://www.eclipse.org/>)
- + [The Matrix Foundation](<https://matrix.org/foundation/>)

Governance

- + [OPSO Zone](<https://ospo.zone/>) ([Good Governance Initiative](<https://ospo.zone/ggi/>))
- + [TODO Group](<https://todogroup.org/>)
- + [OW2 Open Source Good Governance Initiative](https://www.ow2.org/view/OSS_Governance/)
- + [The Open Source Way](<https://www.theopensourceway.org/>)

Maintenance

- + [SustainOSS's working groups](<https://sustainoss.org/working-groups/>)
- + [ELIXIR SMP](<https://biohackrxiv.org/k8znb/>)

Other Resources

- + [Producing Open Source Software](<https://producingoss.com/>)
- + [IEEE Computer Society Open Source Software Project Governance PAR Study Group](<https://sagroups.ieee.org/osspg/>)
- + [Georg Link writing](<https://opensource.com/users/georglink>)
- + [Open source community measurement software](<https://opensource.com/article/21/6/health-metrics-cauldron>)
- + [5 Levels of Transparency for OS Communities](<https://opensource.com/article/22/2/transparency-open-source-communities>)
- + [Open Source Guides (developed & maintained by GitHub)](<https://opensource.guide/>)
- + [UNICEF Open Source Inventory](<https://unicef.github.io/inventory/>)

Last Activity: 8/17/2022

Assess national strategies of infrastructure support for science

Background

In [our conversation with SSHRC]

(<https://docs.google.com/document/d/1QUZc4ZBXZwJ7kFUFEnzSyZ2qO7WafNB5NnNkobnFe6E/edit?usp=sharing>) they flagged that in developing their infrastructure strategy, they have been referencing the [German model of support] (https://www.dfg.de/en/research_funding/international_cooperation/funding/ahrc/index.html) and it would be good to do a shallow analysis of this model for our own reference as a case study other organizations are looking at.

Resources

+ <https://www.vyzkumne-infrastruktury.cz/en/2021/12/international-peer-review-of-large-research-infrastructures-of-the-czech-republic-in-2021/>

Last Activity: 8/9/2022

Assess open infrastructure landscape/gaps outside the EU/North America

Purpose

Describe the open infrastructure outside the western context of US-CAN-EUR

Outcome

Provide a critical awareness for our ourselves, others in the US-CAN-EUR space, and to demonstrate a commitment to decolonizing the research infrastructure space

Resources

+ [OA in Angola] (<https://www.orfg.org/news/2022/6/16/orfg-issues-community-call-to-improve-research-output-tracking>)

Last Activity: 8/31/2022

Better assess ongoing provider needs and situation

Following on [SPARC Europe Landscape analysis] (<https://zenodo.org/record/4159838#.Yer1r1jMK1Q>)

Last Activity: 8/9/2022

Review policies that support or inhibit open infrastructure

Started a [Google Doc]

(<https://docs.google.com/document/d/1xsnxlm20QXOTg6AYMboeT9bsC2KLg6HMyfTweuErOek/edit#heading=h.hx8wpjvebcgr>) with an initial review of open infrastructure policies.

Purpose

Map the landscape of open infrastructure policies

Content

At the moment this includes ****policymakers**** as well as published resources such as ****criteria, guidelines, recommendations, agendas**** centered around open science, however, items with an open infrastructure focus have been emphasized.

Open questions

- Where does this piece fit into the larger question of information/knowledge management?

Last Activity: 8/9/2022

Explore the incentive structure around open science

https://www.theguardian.com/books/2022/apr/11/the-big-idea-should-we-get-rid-of-the-scientific-paper?CMP=Share_iOSApp_Other

+ [National Academies Roundtable on Aligning Incentives for Open Science](<https://www.nationalacademies.org/our-work/roundtable-on-aligning-incentives-for-open-science>)

Last Activity: 8/11/2022

What are the meaningful costs/benefits of organizing in different jurisdictions?

Last Activity: 8/31/2022