

From Data to Action: Using Metrics to Improve FOSS Communities

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Thank You!



**ALFRED P. SLOAN
FOUNDATION**



**FORD
FOUNDATION**

Whoami



- Geek, traveler, reader
- 20+ yr tech career focused on community & open source (VMware, Intel, Puppet, ...)
- OpenUK Board
- CHAOSS Board and Maintainer
- CNCF TAG Contrib Strategy co-chair
- PhD on Linux kernel collaboration

Photos by Mom, [Josh Bancroft](#), [Don Park](#)

Agenda

- **CHAOSS Overview**
- **CHAOSS Practitioner Guides & Interpreting Metrics:**
 - **Responsiveness**
 - **Contributor Sustainability**
 - **Organizational Participation**
 - **Security**
- **Final Thoughts**

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CHAOSS: Community Health Analytics for Open Source Software

We are:

- An Open Source, Linux Foundation Project
- Globally distributed with 2000+ members in Slack
- A lovely place to spend your time

We are NOT:

- Not focused on medical health
- Not for-profit with any specific mandate
- Not only focused on code contributions

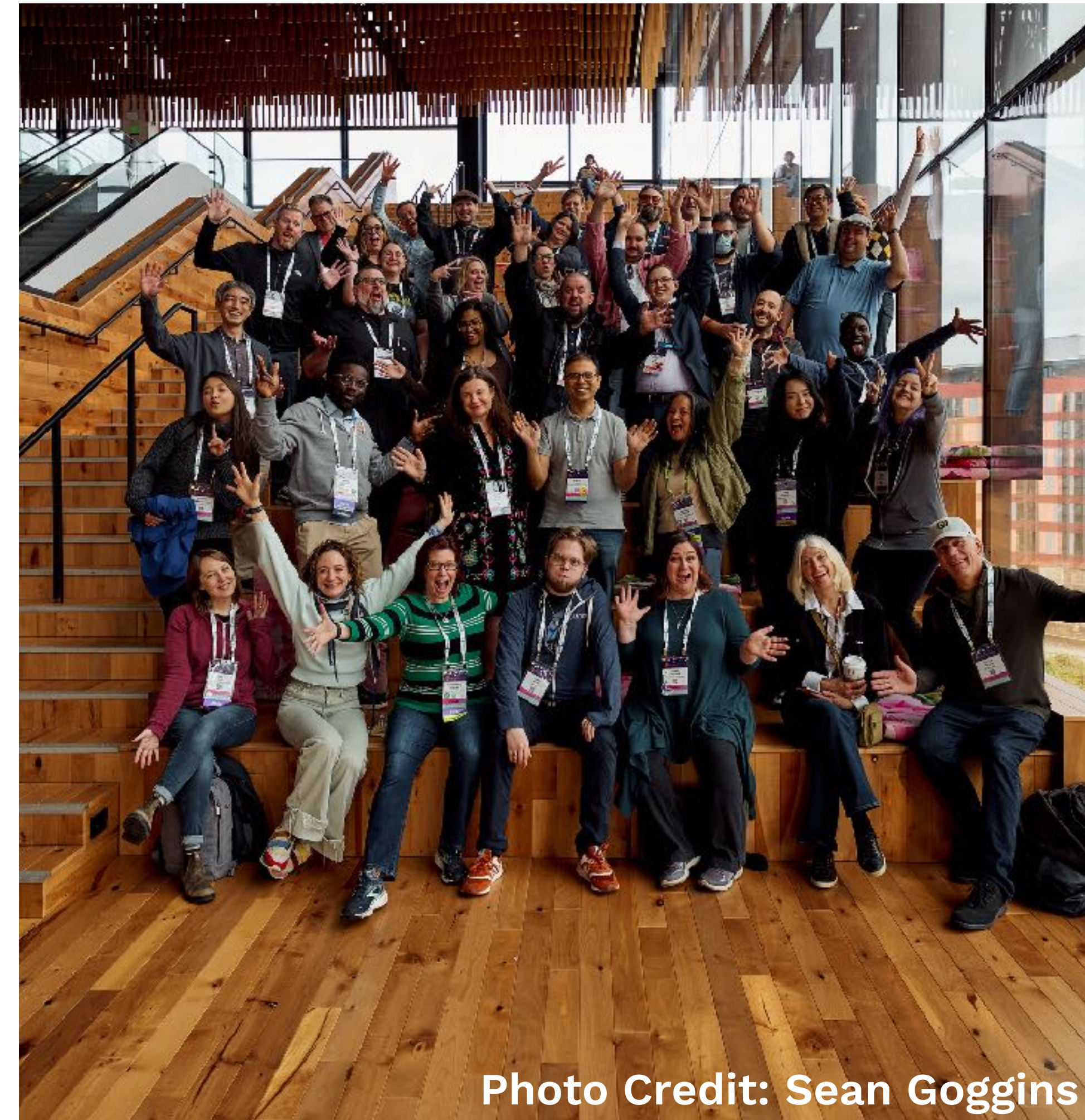


Photo Credit: Sean Goggins

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We Love ALL Contributions

- Code / Code review
- Metric and Metric Model Development
- Community Management (like facilitating meetings or welcoming newcomers)
- Project Management
- Design and Accessibility
- Website
- Answering Questions
- Reviewing Badging Applications (Badgers)

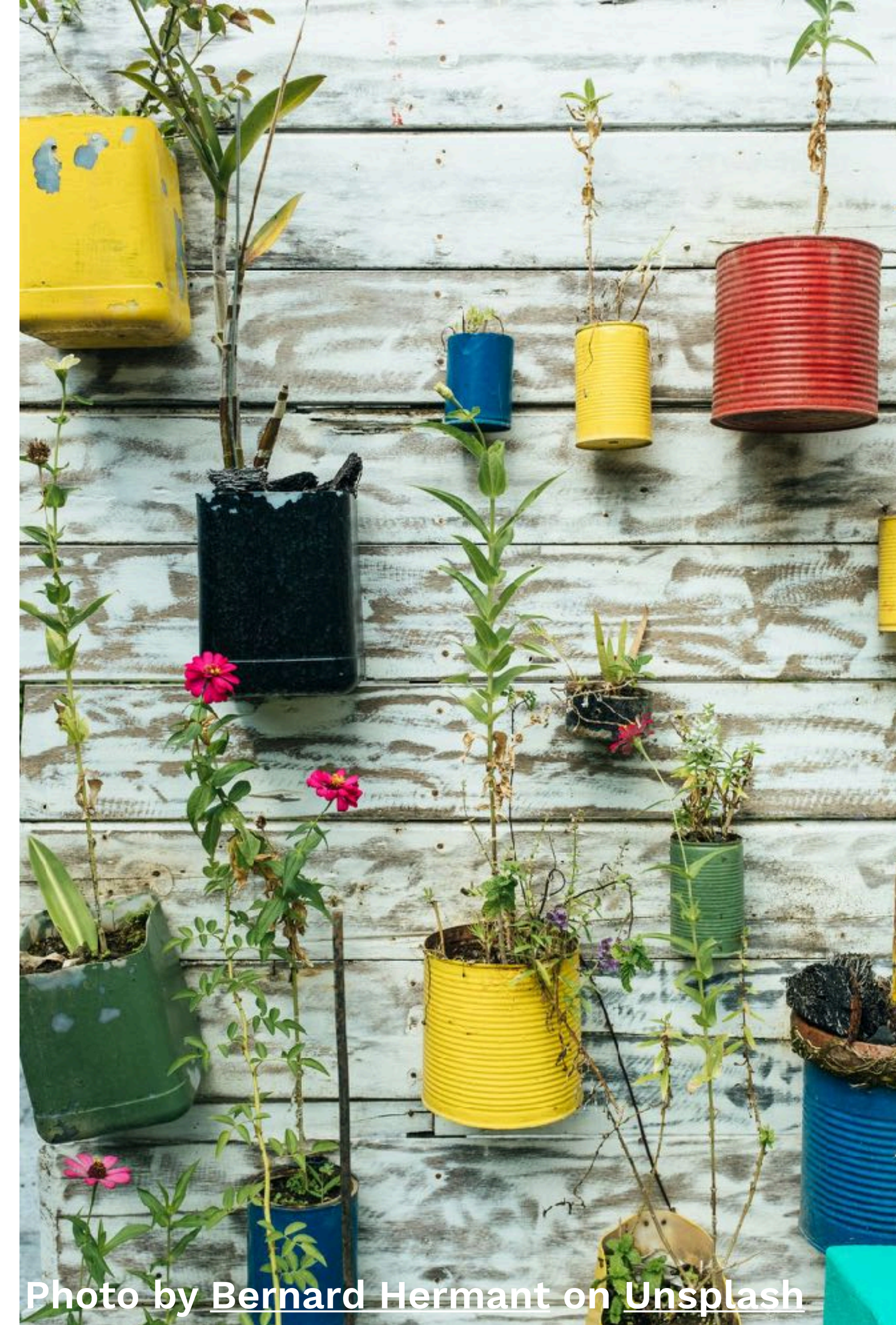


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Join Us!

Context WGs: OSPOs, Academic / Uni, Scientific, App Ecosystem, Data Science

Metrics WGs: Metrics Development, Metrics Models, DEI

Chapters: CHAOSS Africa, CHAOSS Asia, CHAOSS Latam, CHAOSS Balkans

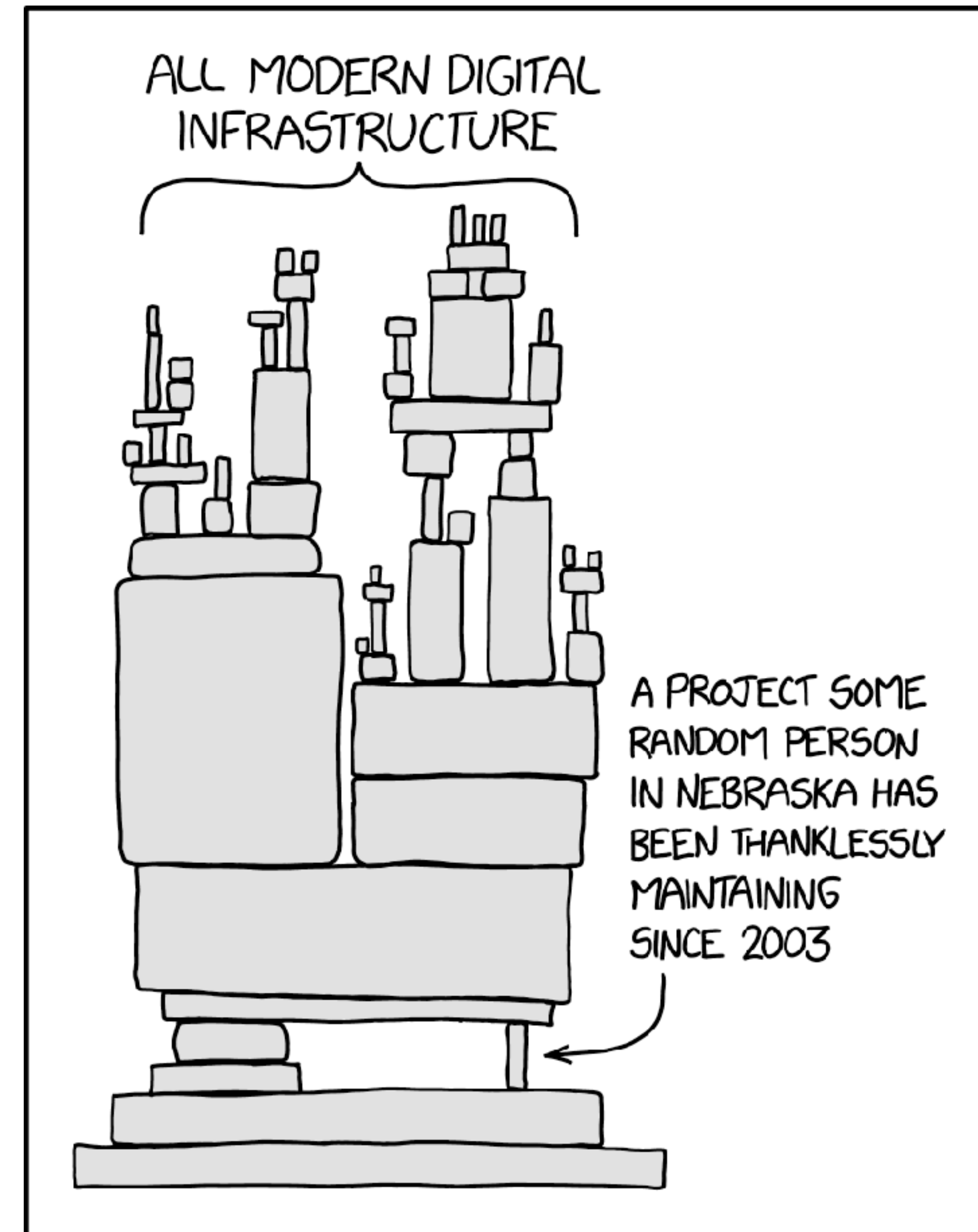
Programs: DEI Event Badging and Project Badging

Software: Augur and GrimoireLab

And More!

Why Should You Care about Metrics?

Use metrics to understand
the open source projects
you care about
to avoid disruptions



Metrics Models

Approaches for measuring consumption and contribution

What is This?
Metrics related to outbound / upstream contributions to open source projects whether developed by your org or a 3rd party (e.g., development culture, collaboration, and DEI).

Metric Model: Starter Project Health

- Time to First Response
- Change Request Closure Ratio
- Bus Factor
- Release Frequency

CONTRIBUTION



What is This?
An ongoing process using additional metrics to find more ways to improve

IMPROVE

This figure is intended to help organizations quickly and easily consider key open source community health related issues. The figure has two key areas of contribute and consume, and ways that you can improve and sustain these two areas.

What is This?
An ongoing process of monitoring metrics to see if improvements are effective

MONITOR

CONSUMPTION

What is This?
Metrics related to inbound / downstream consumption of open source software within an organization's products, services, and infrastructure (e.g., compliance, procurement, and viability).

Metric Models: Viability

- Governance
- Community
- Compliance & Security
- Strategy

Avoid the Tsunami

More isn't better:

- *Think* about your goals
- *What questions* should you answer
- *Focus* on a few metrics to interpret
- *Build* and add on from there

Goals → Questions → Metrics



Metrics Require Interpretation

Practitioner Guides:

- Introduction
- Responsiveness
- Contributor Sustainability
- Organizational Participation
- More guides coming soon



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Metrics Strategy

Think strategically
about what you
want to accomplish and
customize your metrics

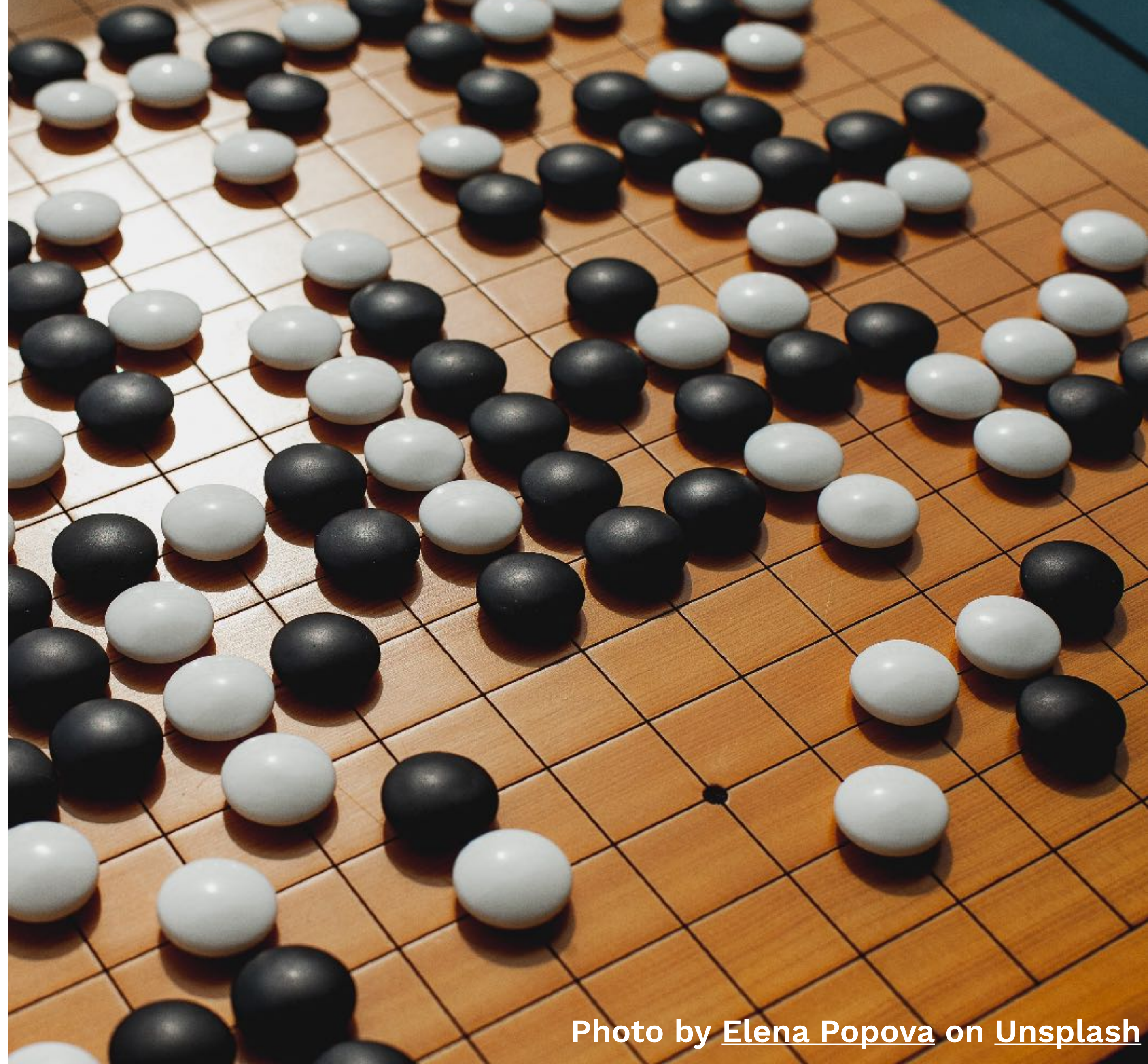


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Collaborate with Your Community

A project's maintainers and contributors can help interpret your metrics and make the best improvements for that project



Image by the CNCF
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Responsiveness

Projects that can keep up
with contributions will
be more sustainable

Key metrics:

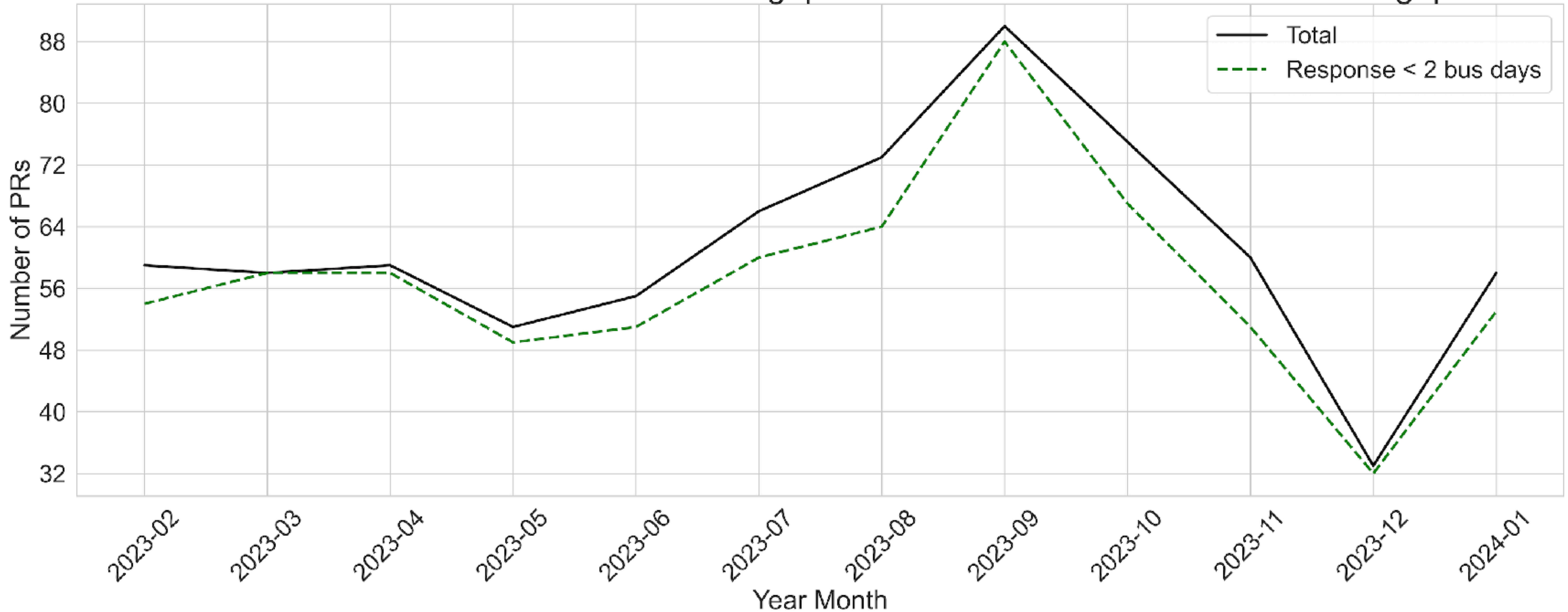
- Time to First Response
- Time to Close
- Change Request Closure Ratio



Responsiveness

Time to First Response

Trend: Positive - the 2023-11 - 2024-01 gap is smaller than the 2023-08 - 2023-10 gap.

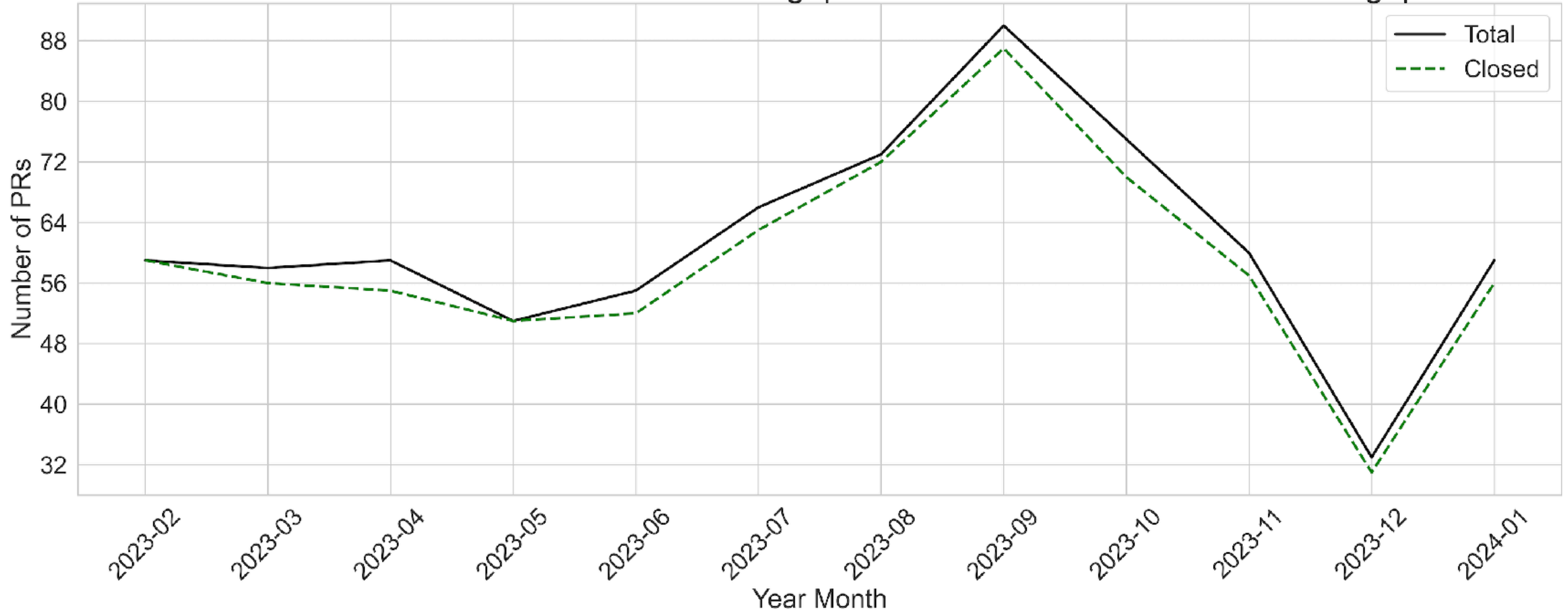


Interpretation: Healthy projects will have little or no gap. A large or increasing gap requires attention.

Responsiveness

Closure Ratio - Sustains and Keeps up with Contributions

Trend: Neutral - the 2023-11 - 2024-01 gap is similar to the 2023-08 - 2023-10 gap.



Interpretation: Healthy projects will have little or no gap. A large or increasing gap requires attention.

Contributor Sustainability

Projects without enough contributors to sustain them are at risk of failure.

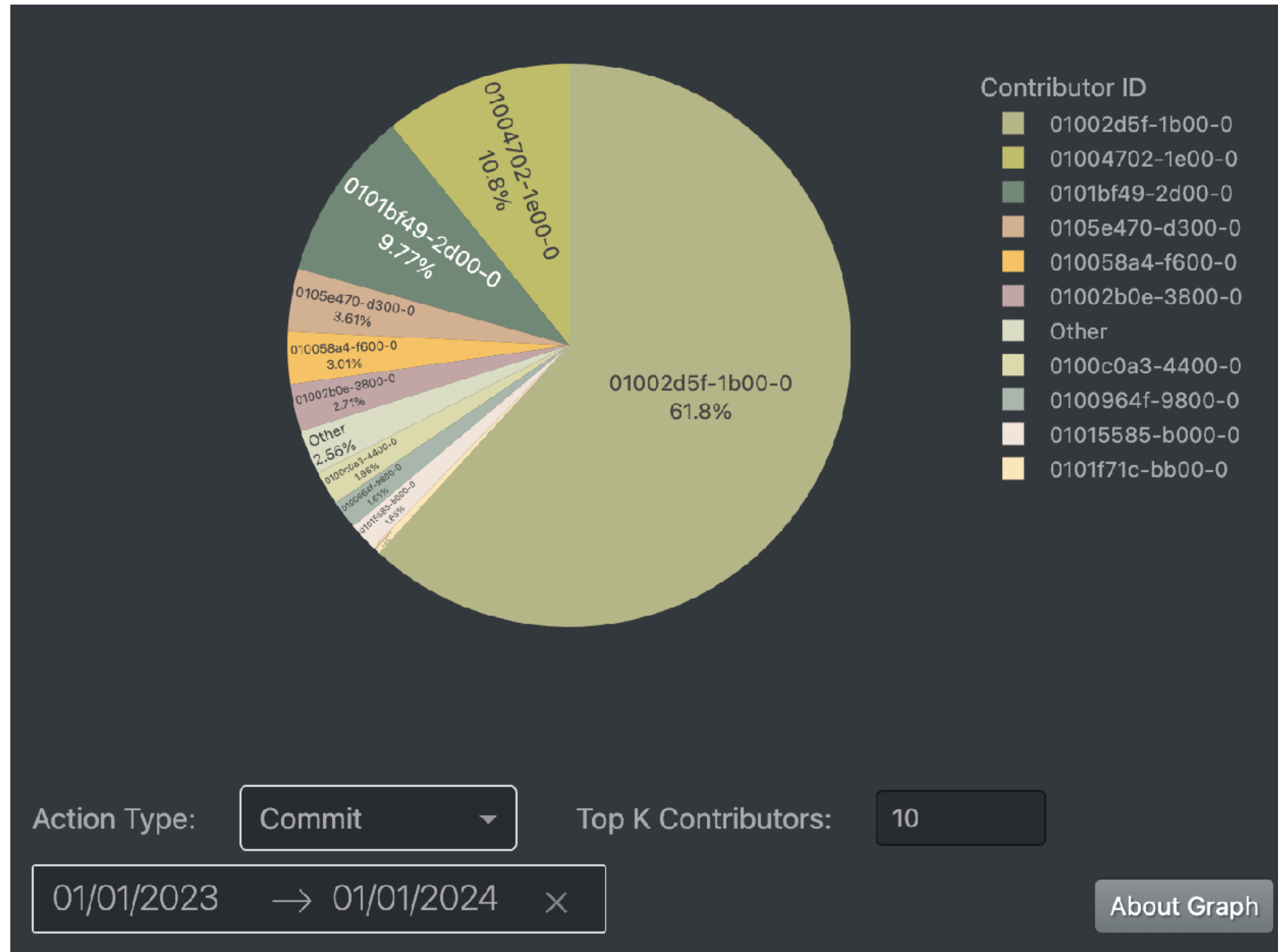
Key metrics:

- Contributor Absence Factor (Bus Factor)
- Contributors
- Types of Contributions



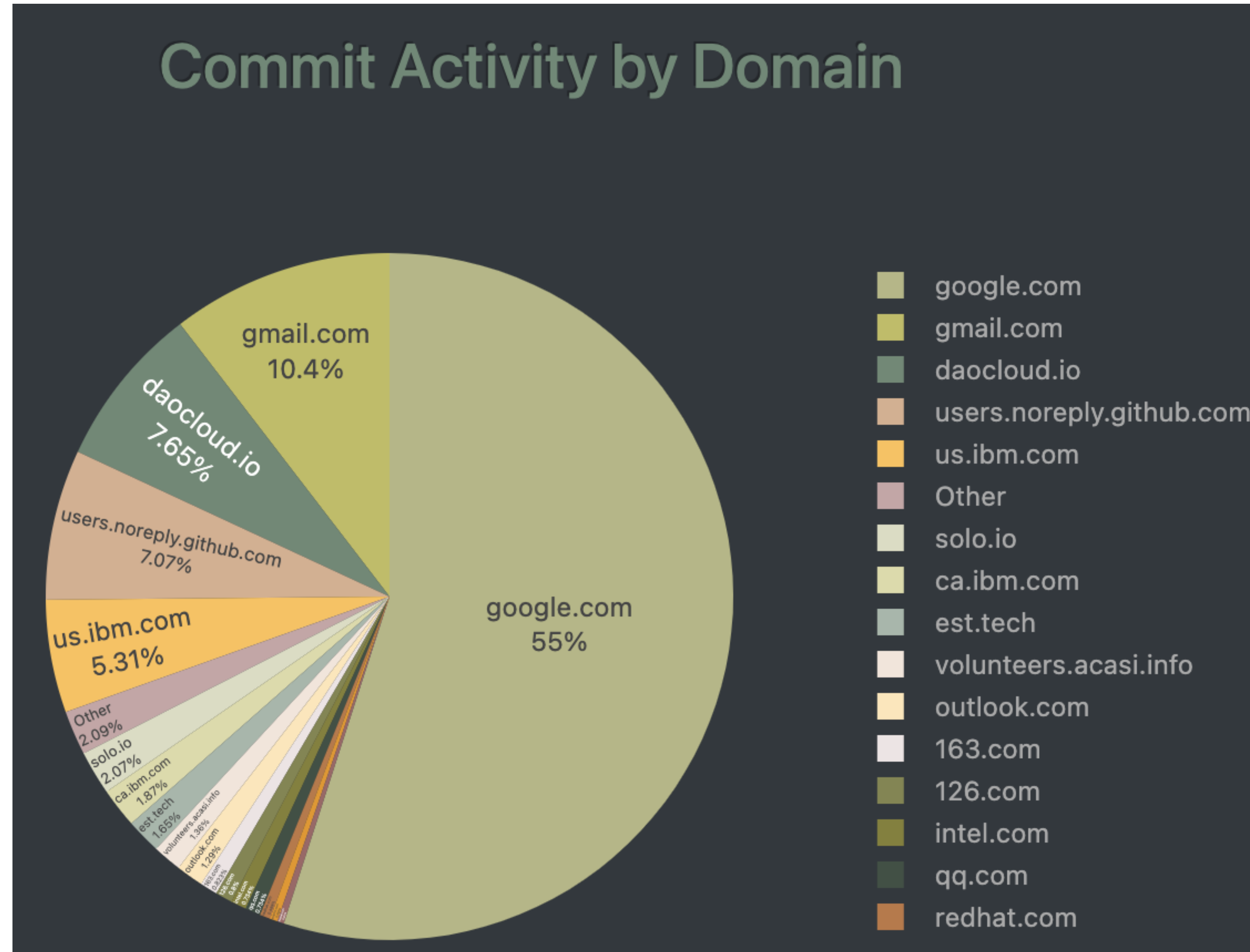
Contributor Sustainability

Are there enough contributors to sustain the project if a key person left?



Organizational Participation

Getting clean organizational affiliation data can be a challenge. It just needs to be good enough to understand the dominant players.



Security

A proactive approach to security increases trust and improves sustained adoption.

Key metrics:

- Libyears
- Change Requests (merge / pull requests)
- Release Frequency

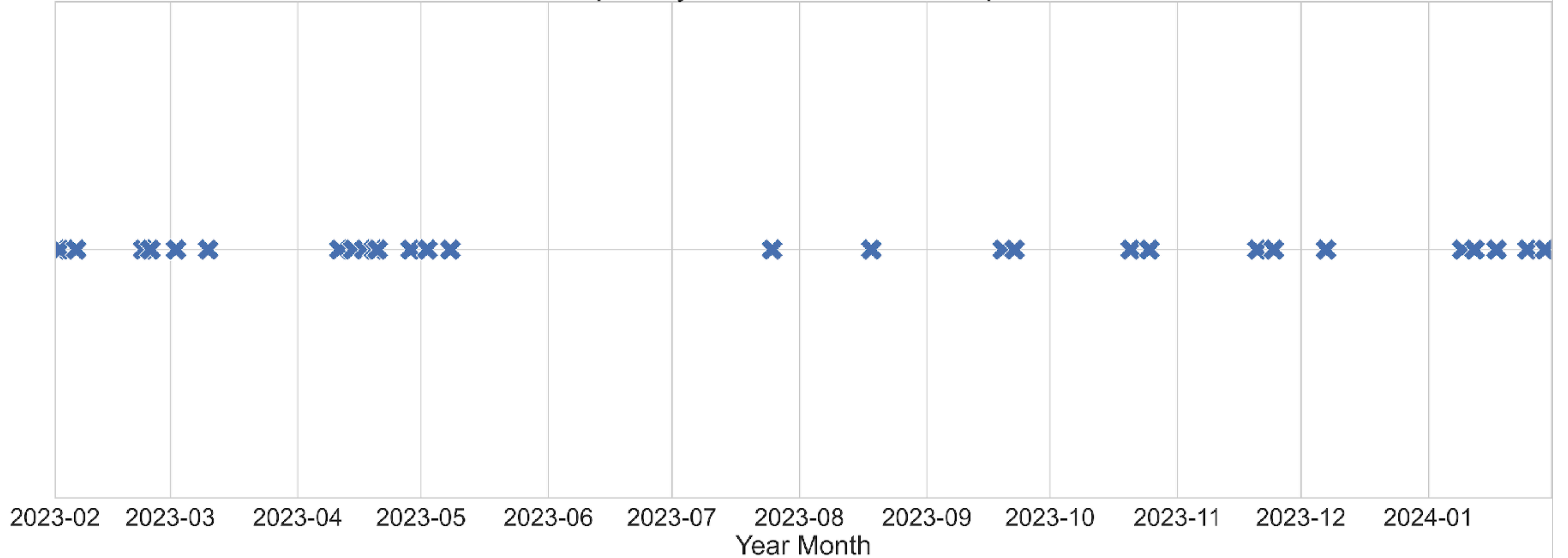


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Security

Release Frequency: 13 releases in the past 6 months.



Interpretation: Healthy projects will have frequent releases with security updates, bug fixes, and features.

Additional Sustainability / Viability Considerations

Governance

Community

Compliance and Security

Strategy



Photo by [Marissa Grootes](#) on [Unsplash](#)

Resources

chaoss.community

chaoss.community/about-chaoss-practitioner-guides

chaoss.community/chaoss-guide-oss-viability

chaoss.community/kb-metrics-and-metrics-models

Final Thoughts

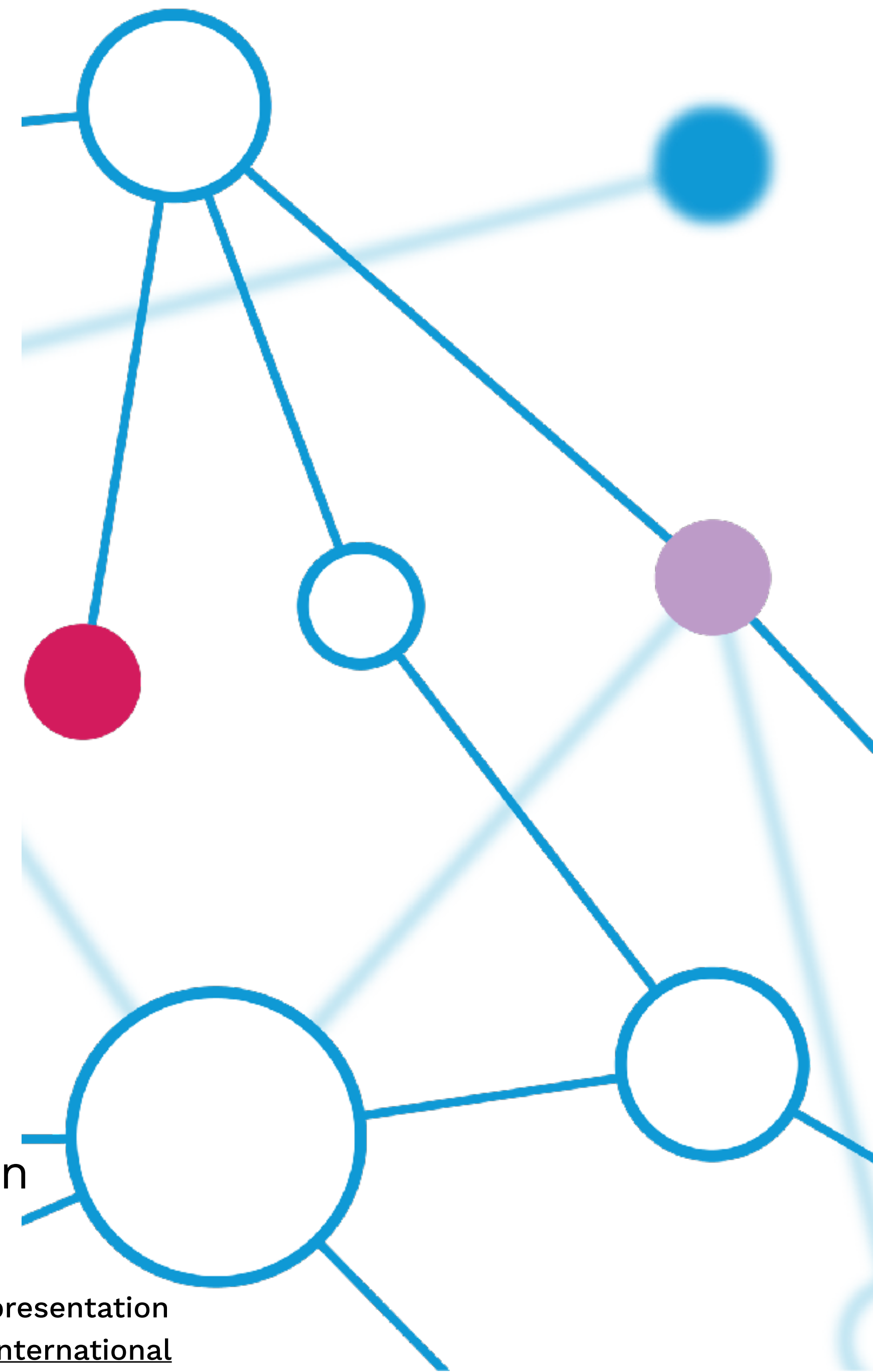
The sustainability of your OSS efforts benefit from thinking about consumption and contribution together while working to improve the projects you care most about.









Photo by [Isaac Smith](#) on [Unsplash](#)

THANK YOU!

Any Questions?



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