From Data to Action: Using Metrics to Improve FOSS Communities

FOSSY August 2024 Dr. Dawn M. Foster **Director of Data Science for CHAOSS**

- https://github.com/chaoss
- 🔟 @chaoss@fosstodon.org

CHACSS

https://chaoss.community/ 🚯 https://fastwonderblog.com/ https://github.com/geekygirldawn @geekygirldawn@hachyderm.io m

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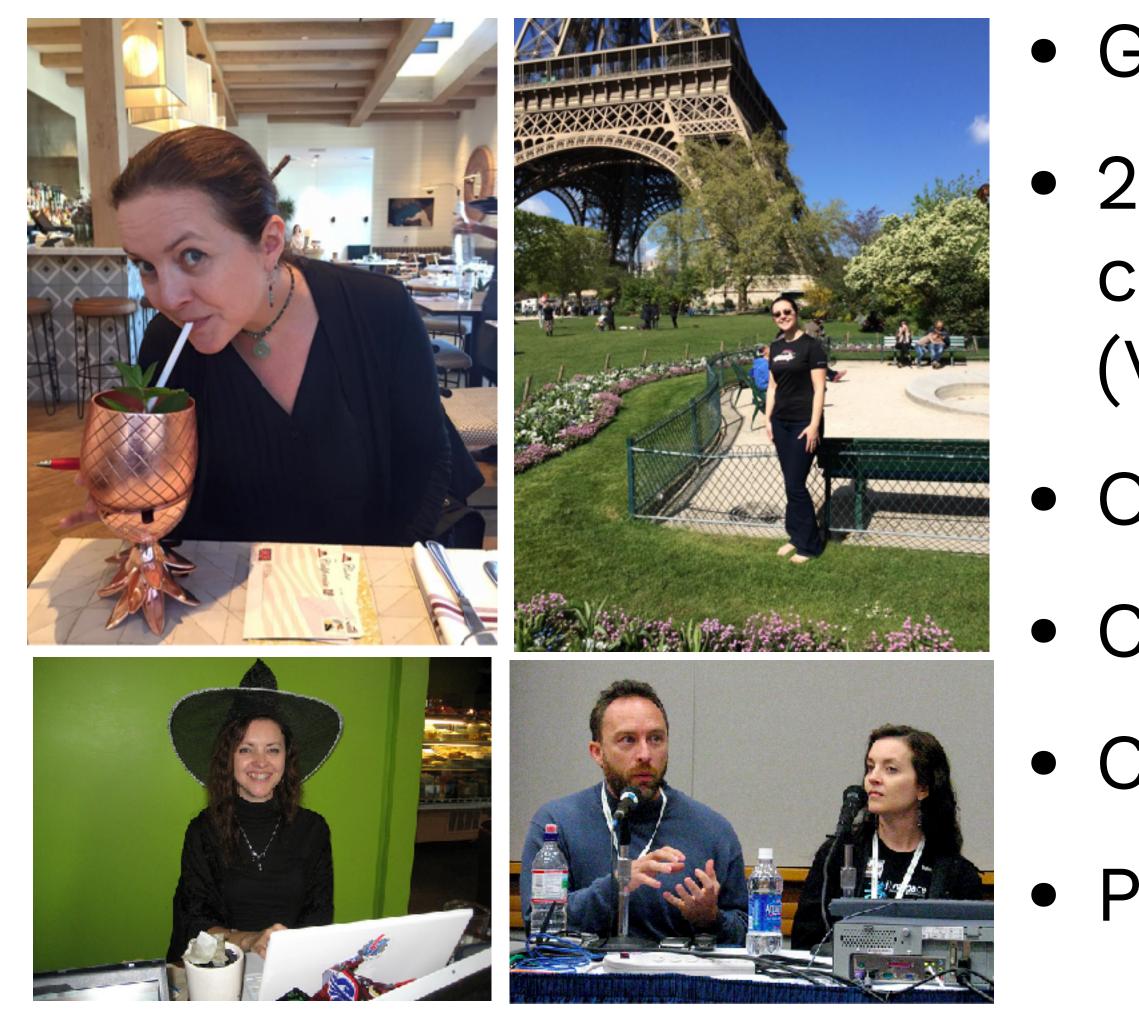


Thank You!





Whoami



Photos by Mom, <u>Josh Bancroft</u>, <u>Don Park</u>



- 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





CHAOSS Overview CHAOSS Practitioner Guides & Interpreting **Metrics:**

Responsiveness

Contributor Sustainability

Organizational Participation

 Security **Final Thoughts**





Photo by Marco Verch - CC BY 2.0



CHAOSS: Community Health Analytics for Open Source Software

We are:

CHACSS

- 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

https://chaoss.community/kb-getting-started/





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!

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https://chaoss.community/kb-getting-started/

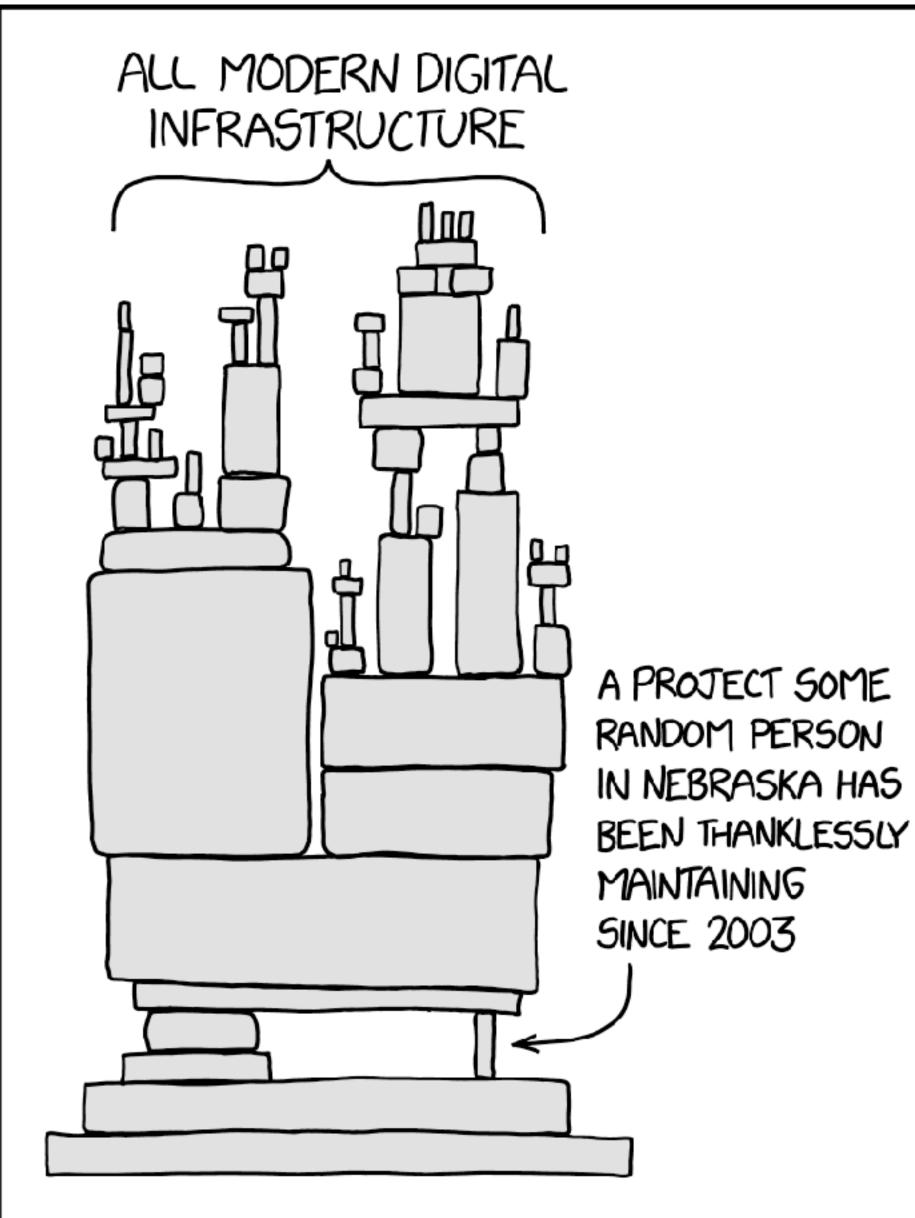




Why Should You Care about Metrics?

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





https://xkcd.com/2347/



Metrics Models

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).

Approaches for measuring consumption and contribution

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What is This?

An ongoing process using additional metrics to find more ways to improve

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

https://chaoss.community/kbtopic/all-metrics-models/

What is This?

Metric Model: Starter Project Health

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

CONTRIBUTION

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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?

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MONIT

An ongoing process of monitoring metrics to see if imrovements are effective

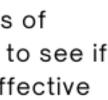
CONSUMPTION

What is This?

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



https://en.wikipedia.org/wiki/GQM

Photo by Matt Paul Catalano on Unsplash





Metrics Require Interpretation

- **Practitioner Guides:**
- Introduction
- Responsiveness
- Contributor Sustainability
- Organizational Participation
- More guides coming soon

CHACSS https://chaoss.community/about-chaoss-practitioner-guides/



Photo by <u>Martin Wilner on Unsplash</u>





Metrics Strategy

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

CIACSS https://chaoss.community/practitioner-guide-introduction/

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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





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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**

CHACSS https://chaoss.community/practitioner-guide-responsiveness/

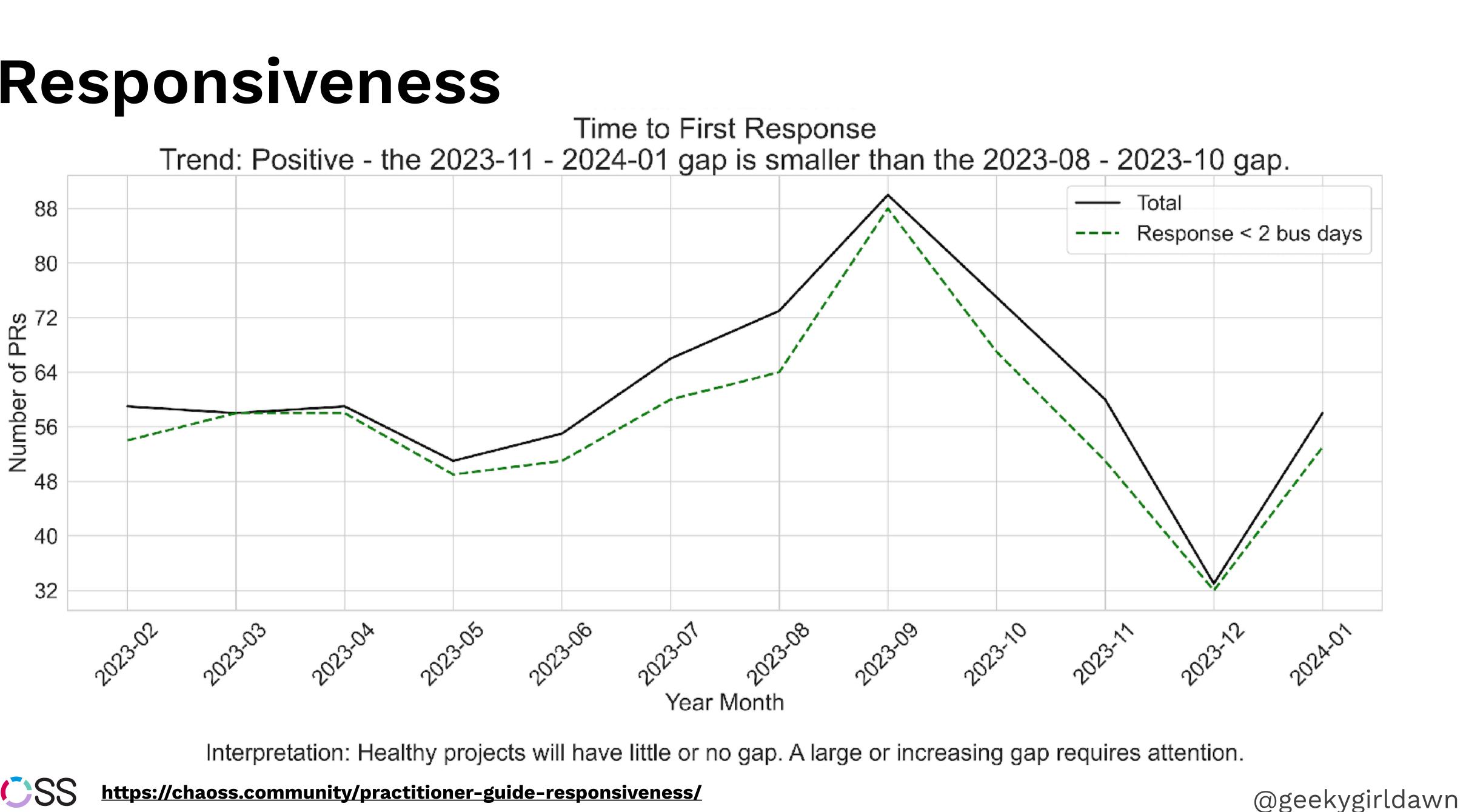






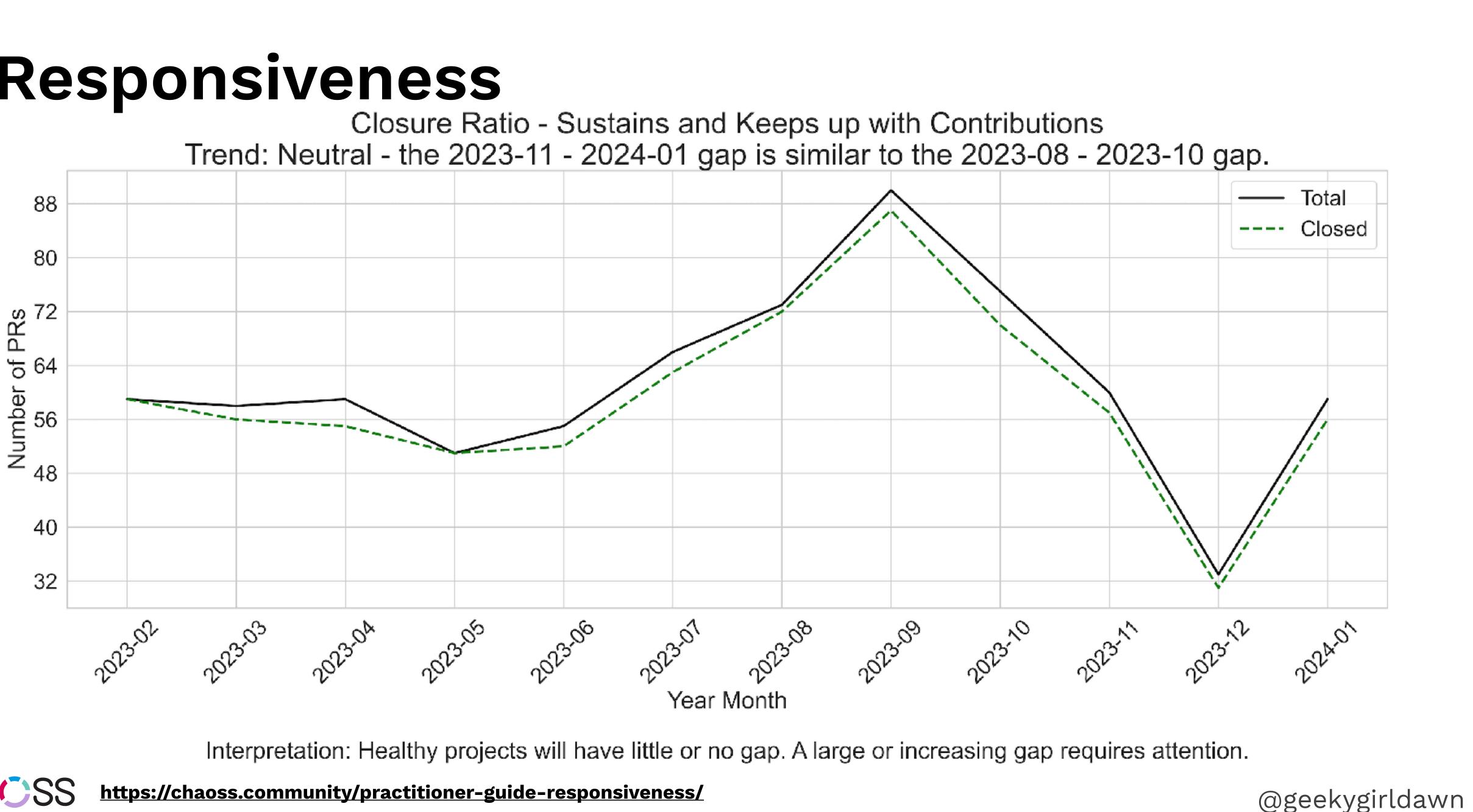


Responsiveness



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Responsiveness



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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**

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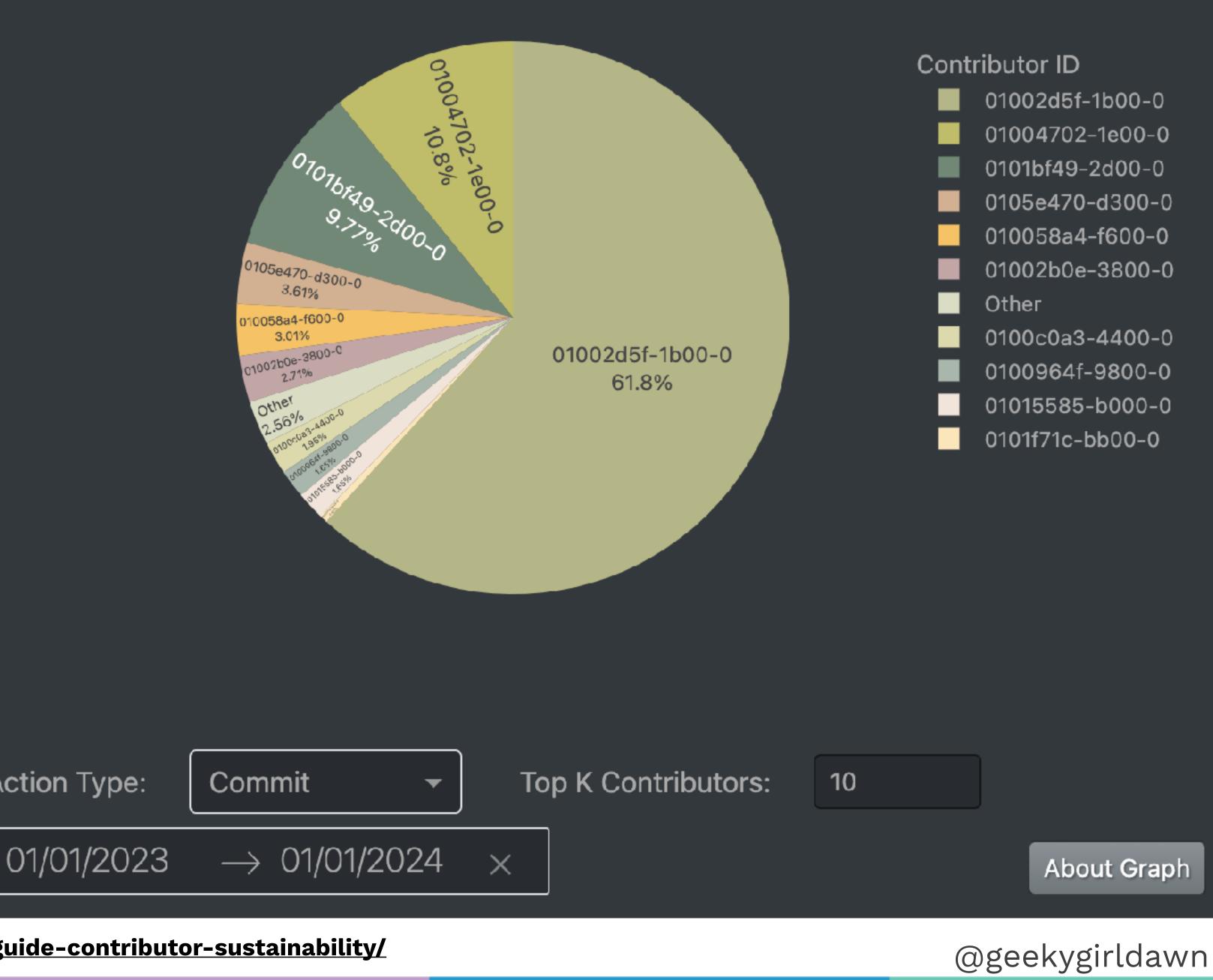


Contributor Sustainability

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

Action Type:

CIACSS https://chaoss.community/practitioner-guide-contributor-sustainability/



Organizational Participation Projects dominated by a single organization might be less sustainable.

Key metrics:

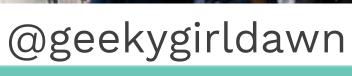
- Elephant Factor
- Organizational Influence
- Organizational Diversity

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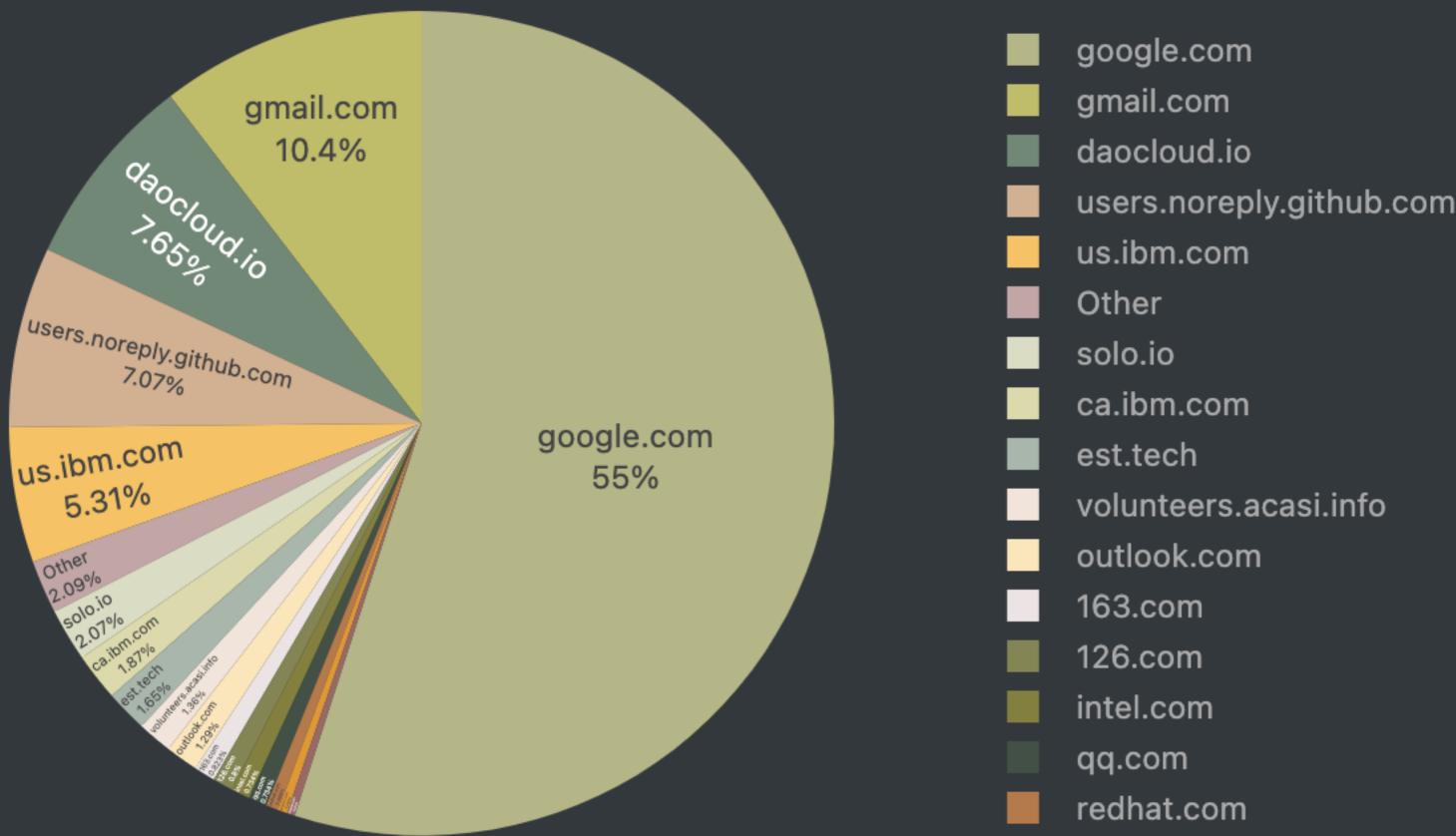


Organizational Participation

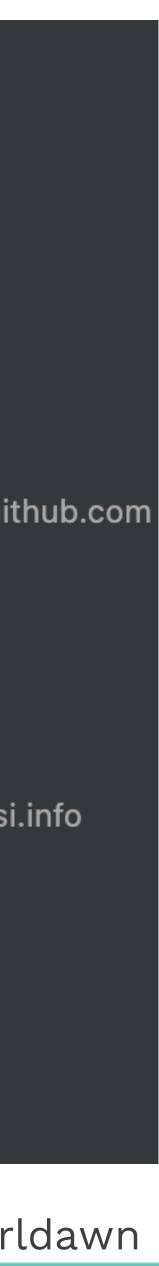
Getting clean organizational affiliation data can be a challenge. It just needs to be good enough to understand the dominant players.

CASS https://chaoss.community/practitioner-guide-organizational-participation/

Commit Activity by Domain







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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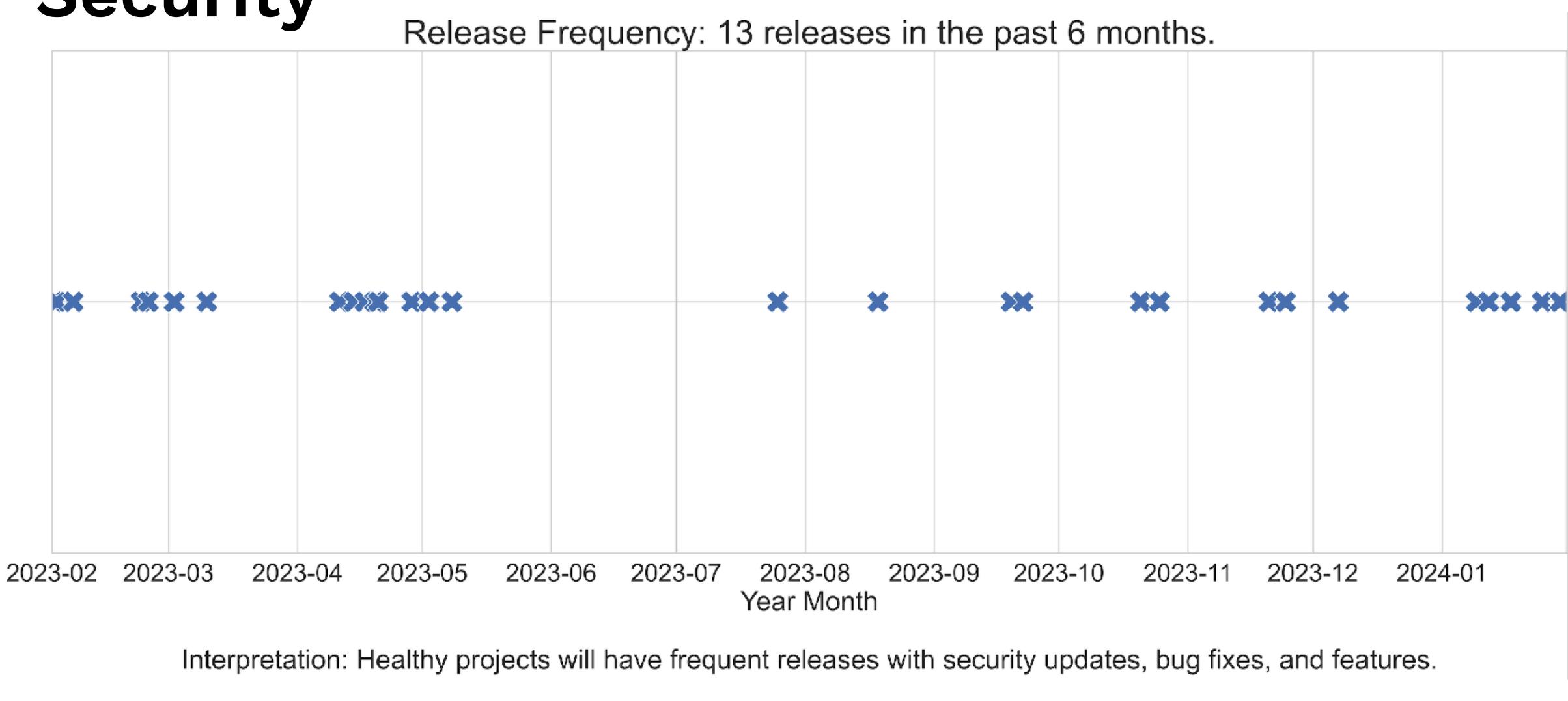
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Master











Additional Sustainability / Viability Considerations

Governance Community **Compliance and Security** Strategy

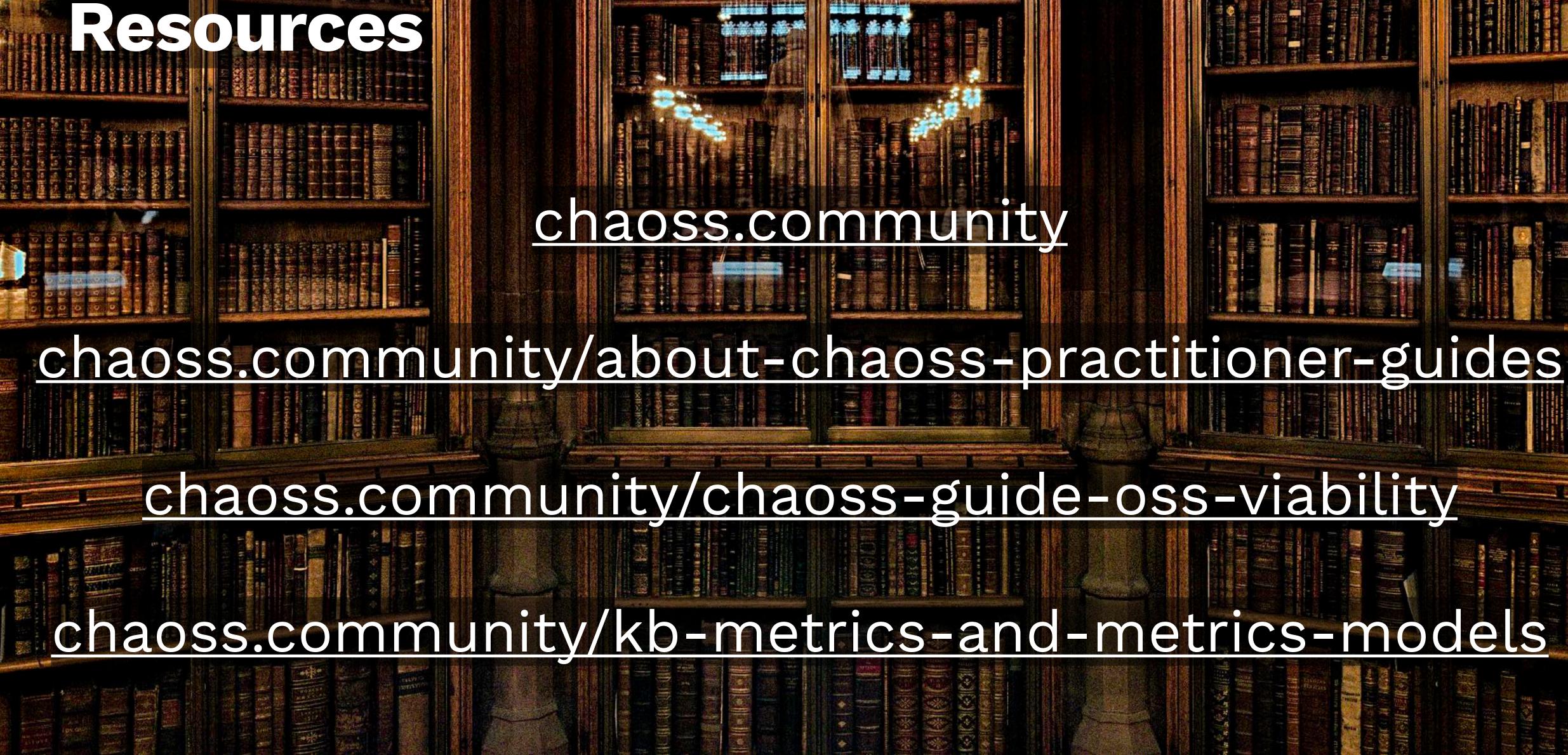


https://chaoss.community/chaoss-guide-oss-viability/ https://chaoss.community/kbtopic/all-metrics-models/











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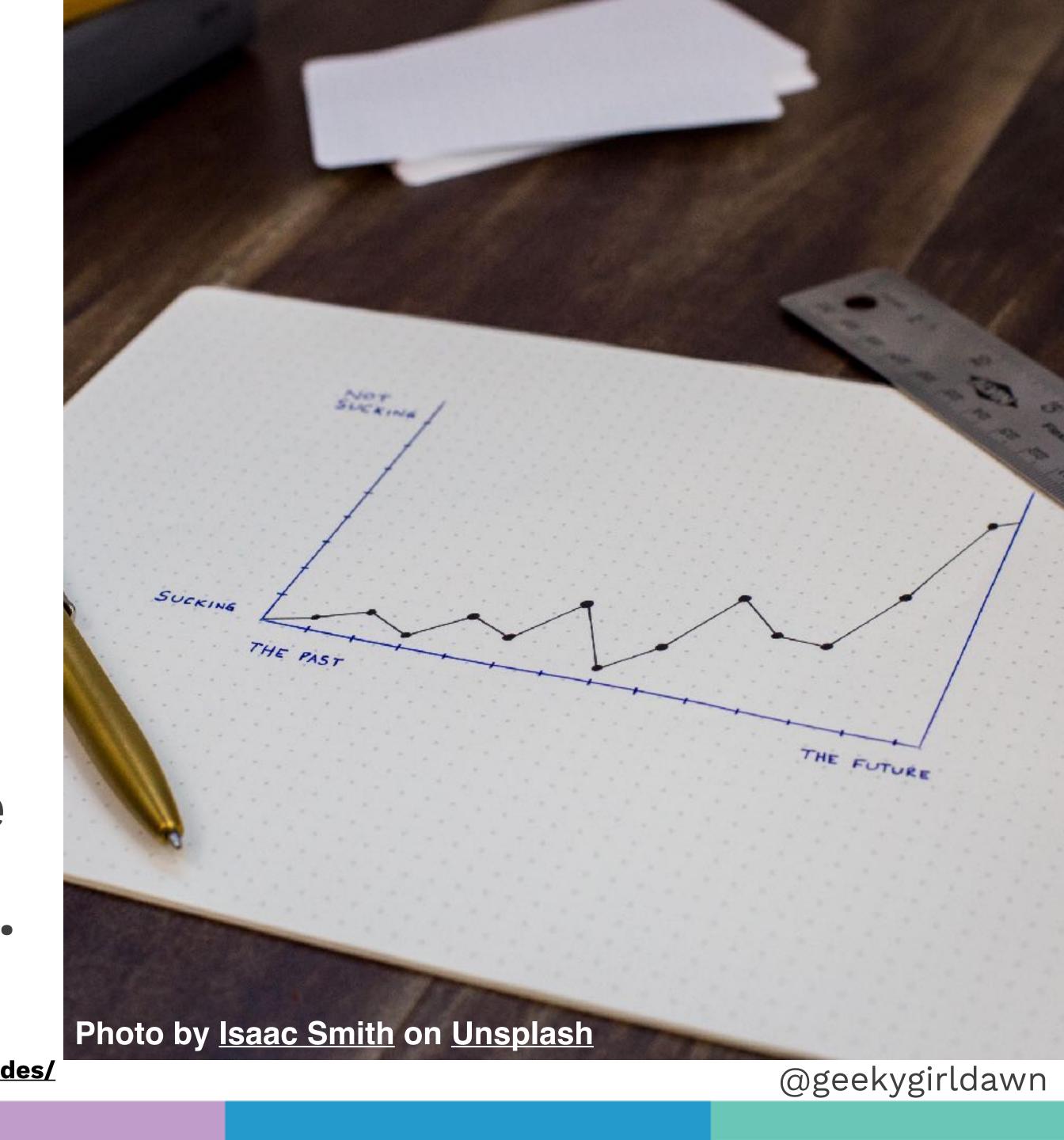
<u>chaoss.community/kb-metrics-and-metrics-models</u>



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.

CIACSS <u>https://chaoss.community/about-chaoss-practitioner-guides/</u>



THANK YOU! Any Questions?

- https://chaoss.community/
- 🔟 @chaoss@fosstodon.org

https://fastwonderblog.com/ O https://github.com/chaoss @geekygirldawn@hachyderm.io m

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