







# Using Metrics to Improve Project Sustainability

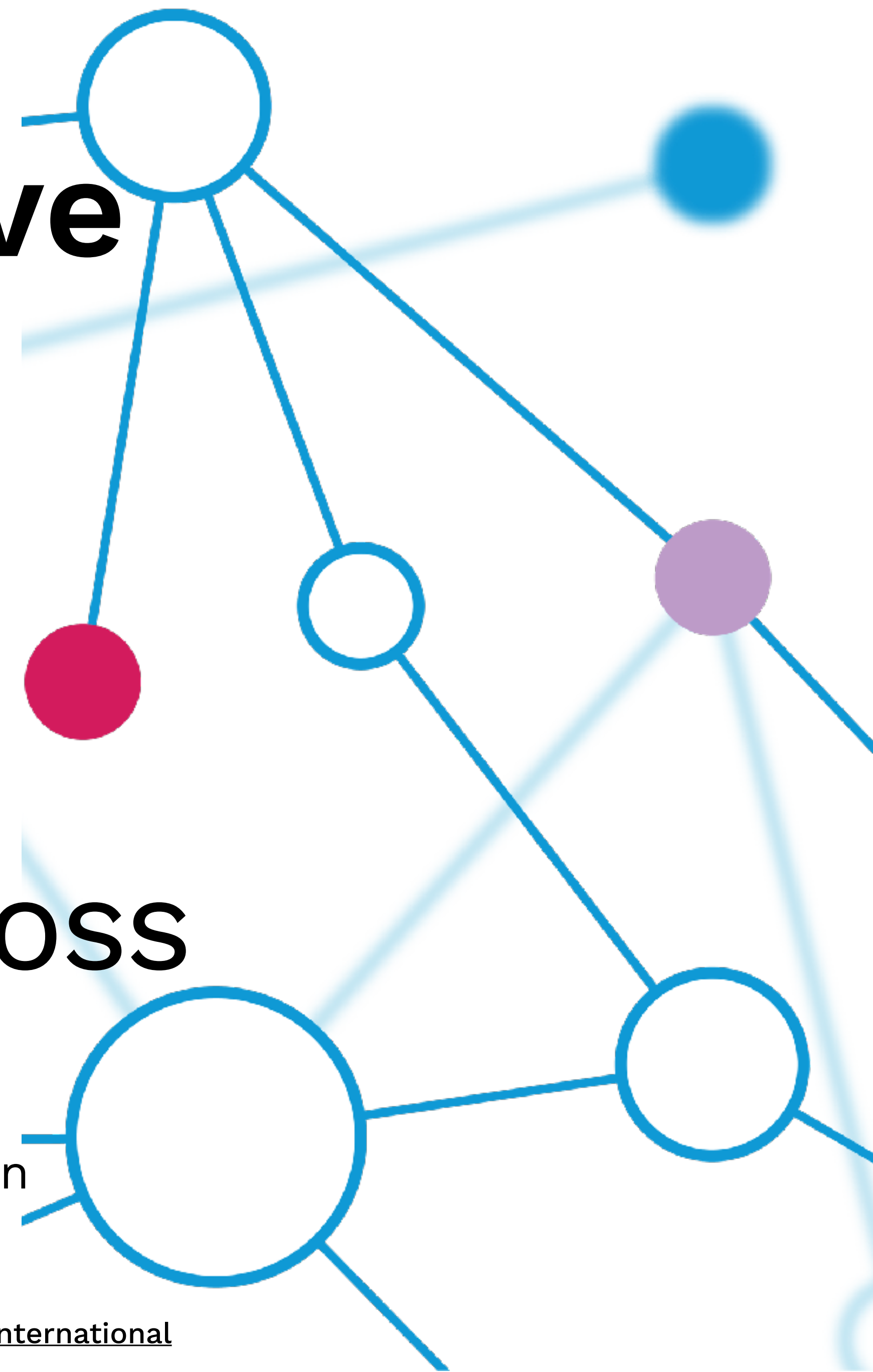
PASC June 2024

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# Thank You!



**ALFRED P. SLOAN  
FOUNDATION**



**FORD  
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# 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

- **Overview and Approaches**
- **Responsiveness**
- **Contributor sustainability**
- **Organizational participation**
- **Security**
- **Additional Sustainability Considerations**

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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:

- Focused on public health (like vaccines)
- For-profit with any specific mandate
- Only focused on code contributions

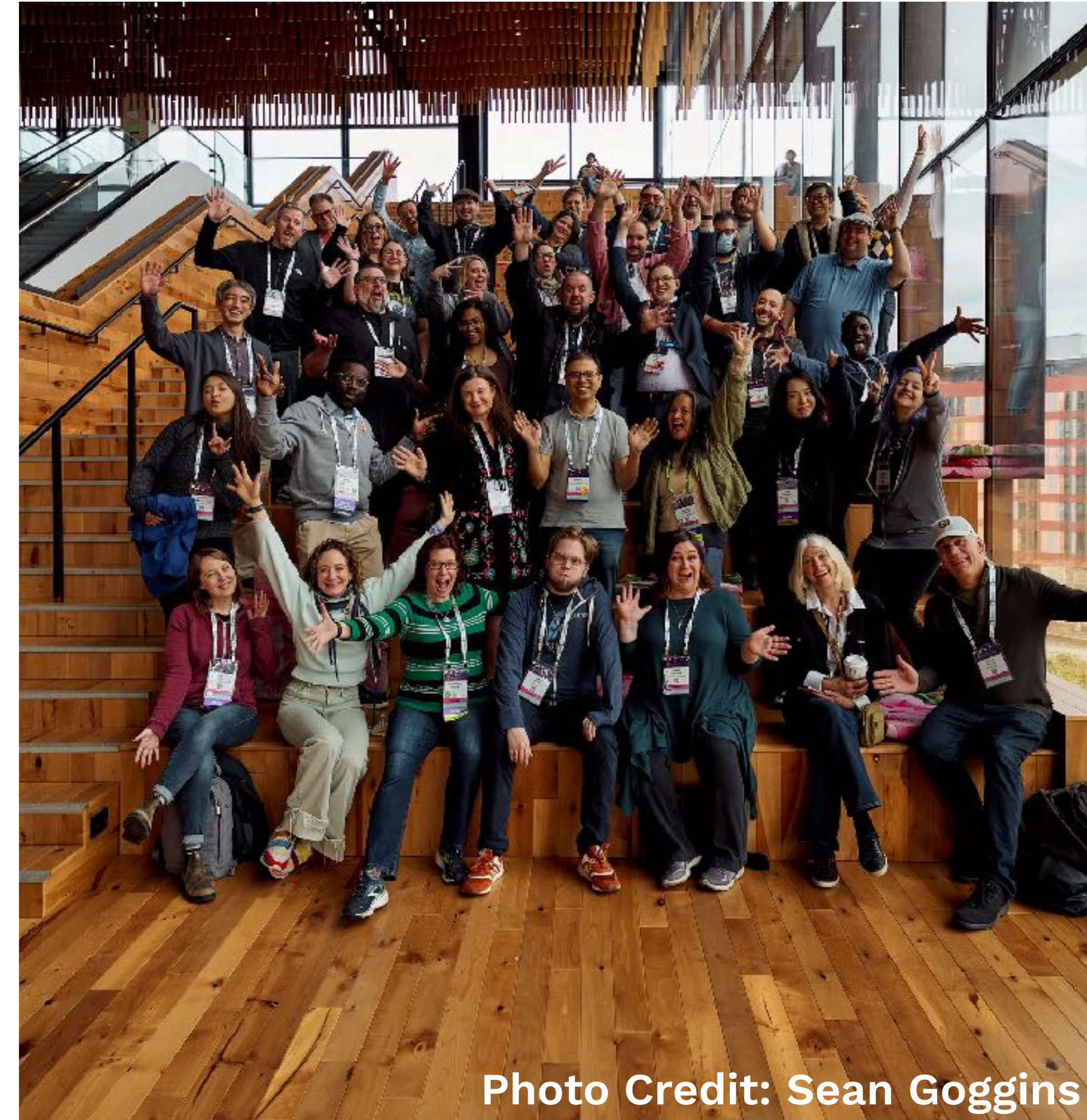


Photo Credit: Sean Goggins

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# 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:

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



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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

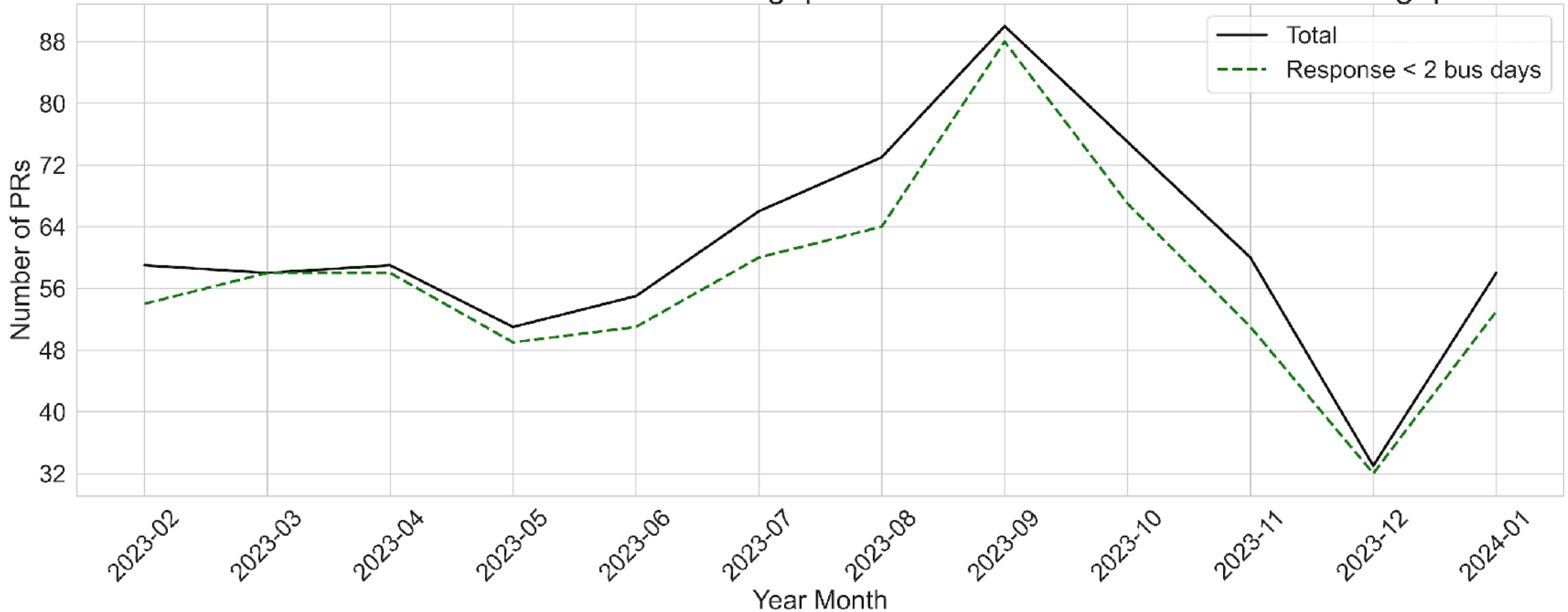




# Responsiveness

## Time to First Response

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

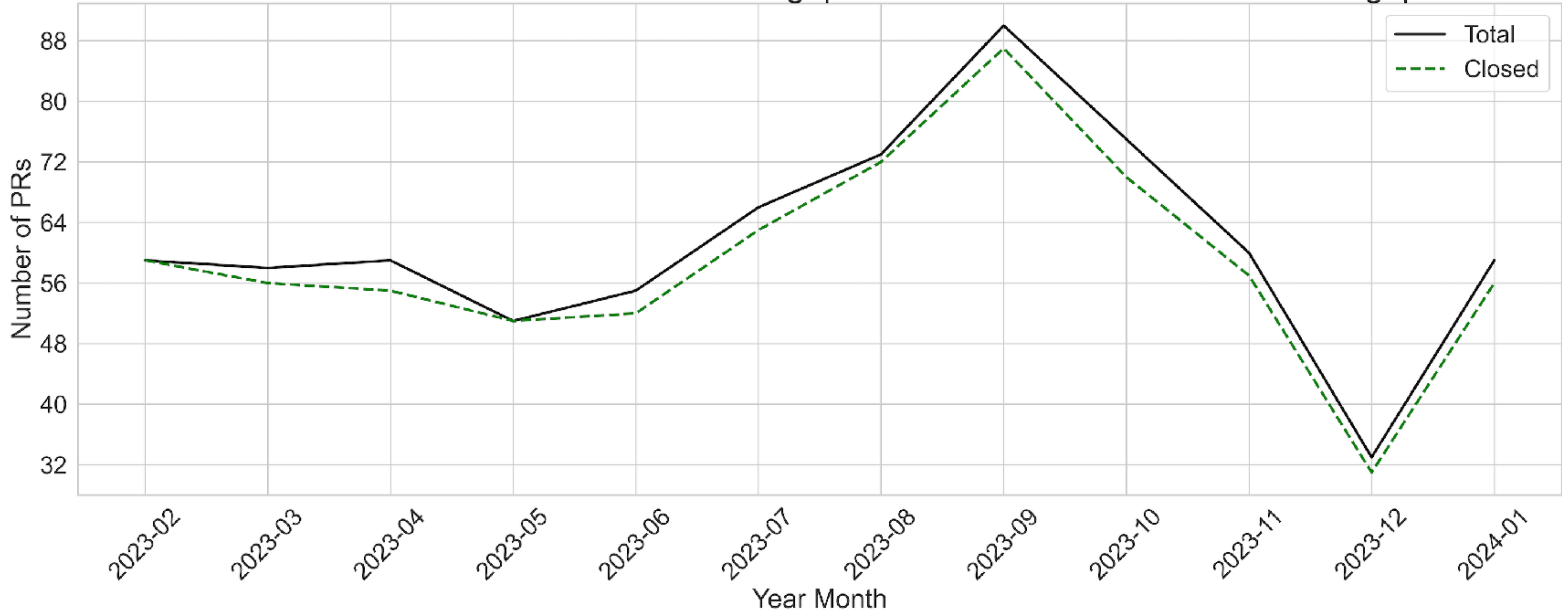


Interpretation: Healthy projects will have little or no gap. A large or increasing gap requires attention.

# 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.

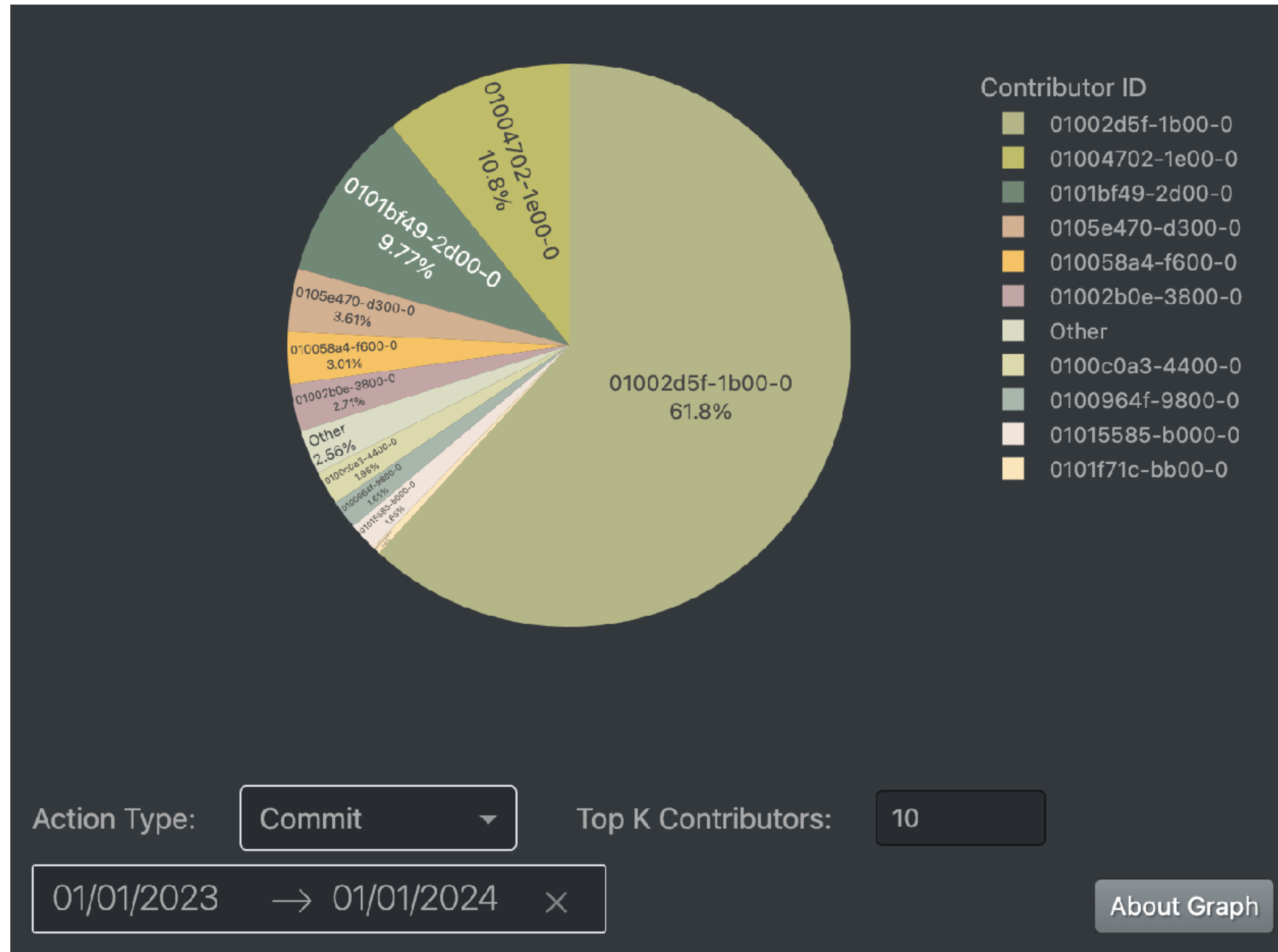
Key metrics:

- Bus Factor
- Contributors
- Types of Contributions



# Contributor Sustainability

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



# Organizational Participation

Projects dominated by a single organization might be less sustainable.

Key metrics:

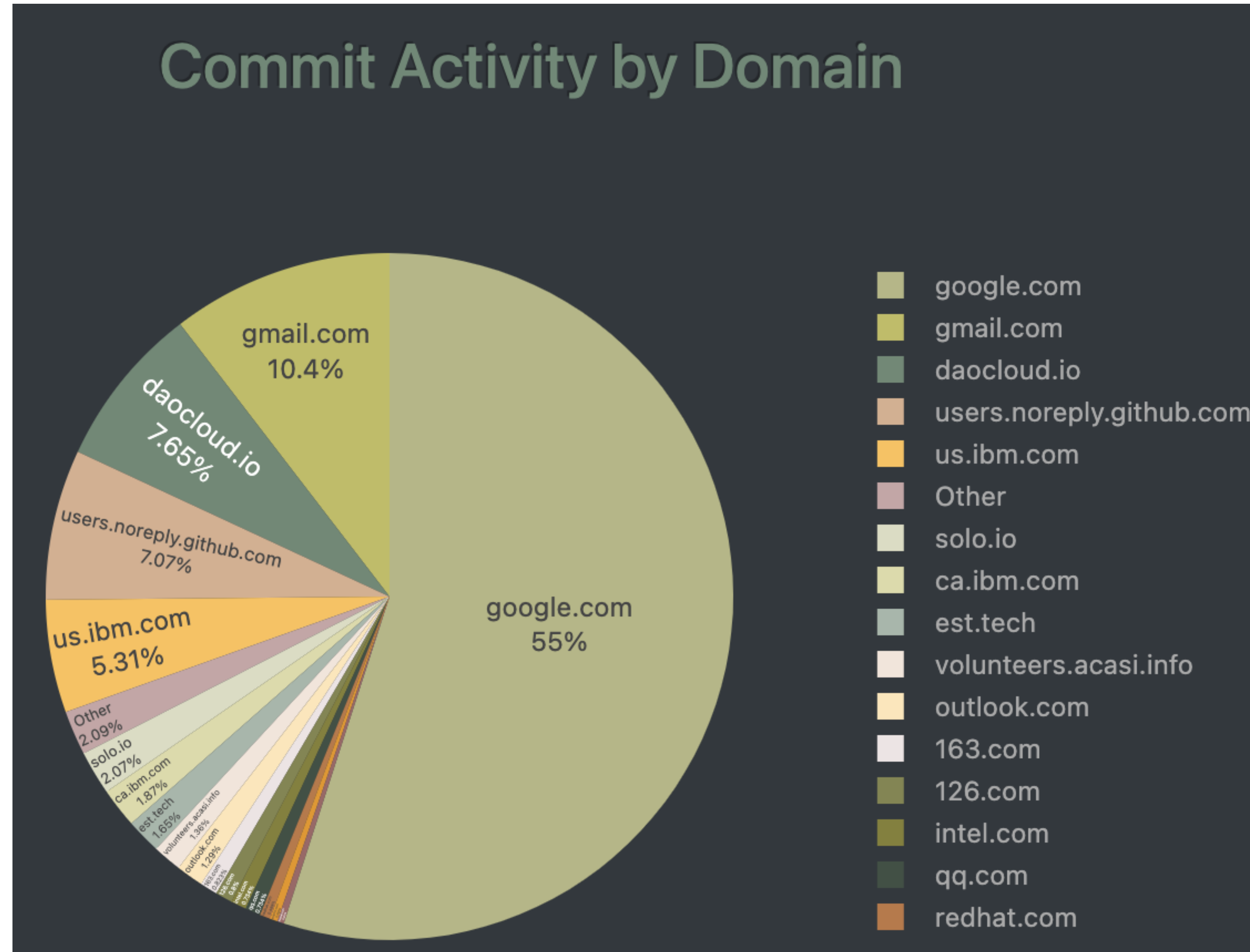
- Elephant Factor
- Organizational Influence
- Organizational Diversity



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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.



# Security

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

**Key metrics:**

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

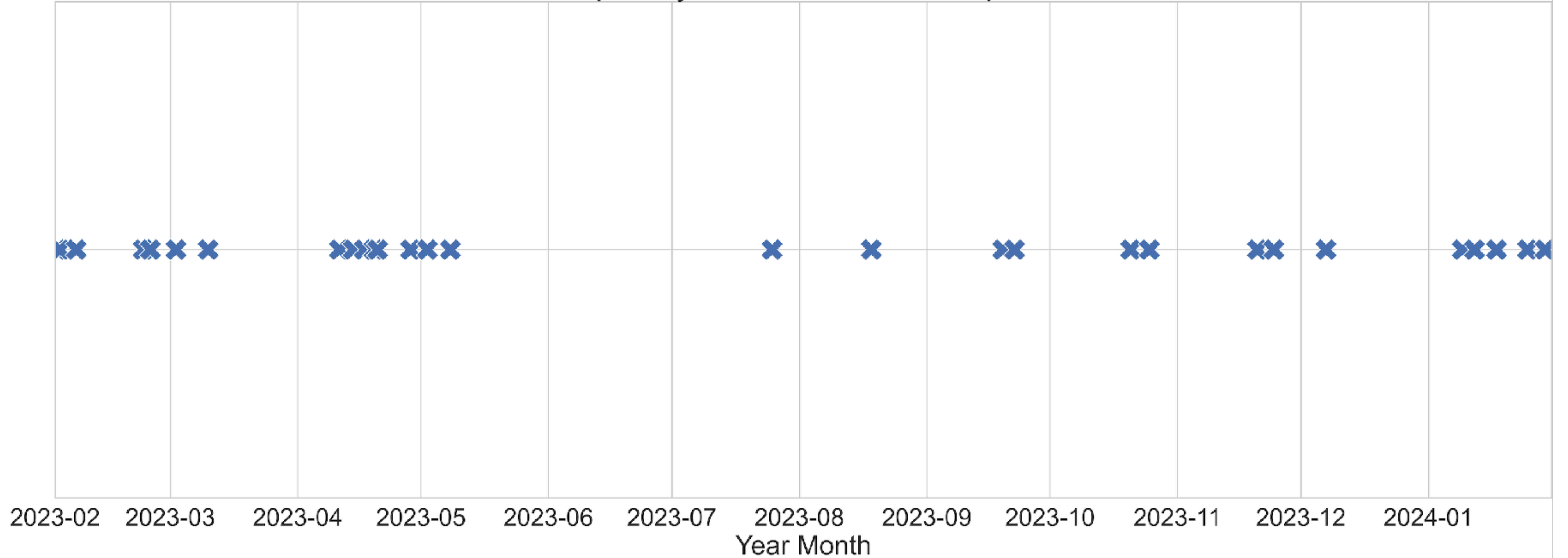


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# Security

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



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# Final Thoughts

Building sustainable open source projects is challenging. Identify issues using metrics and proactively improve sustainability before a crisis.

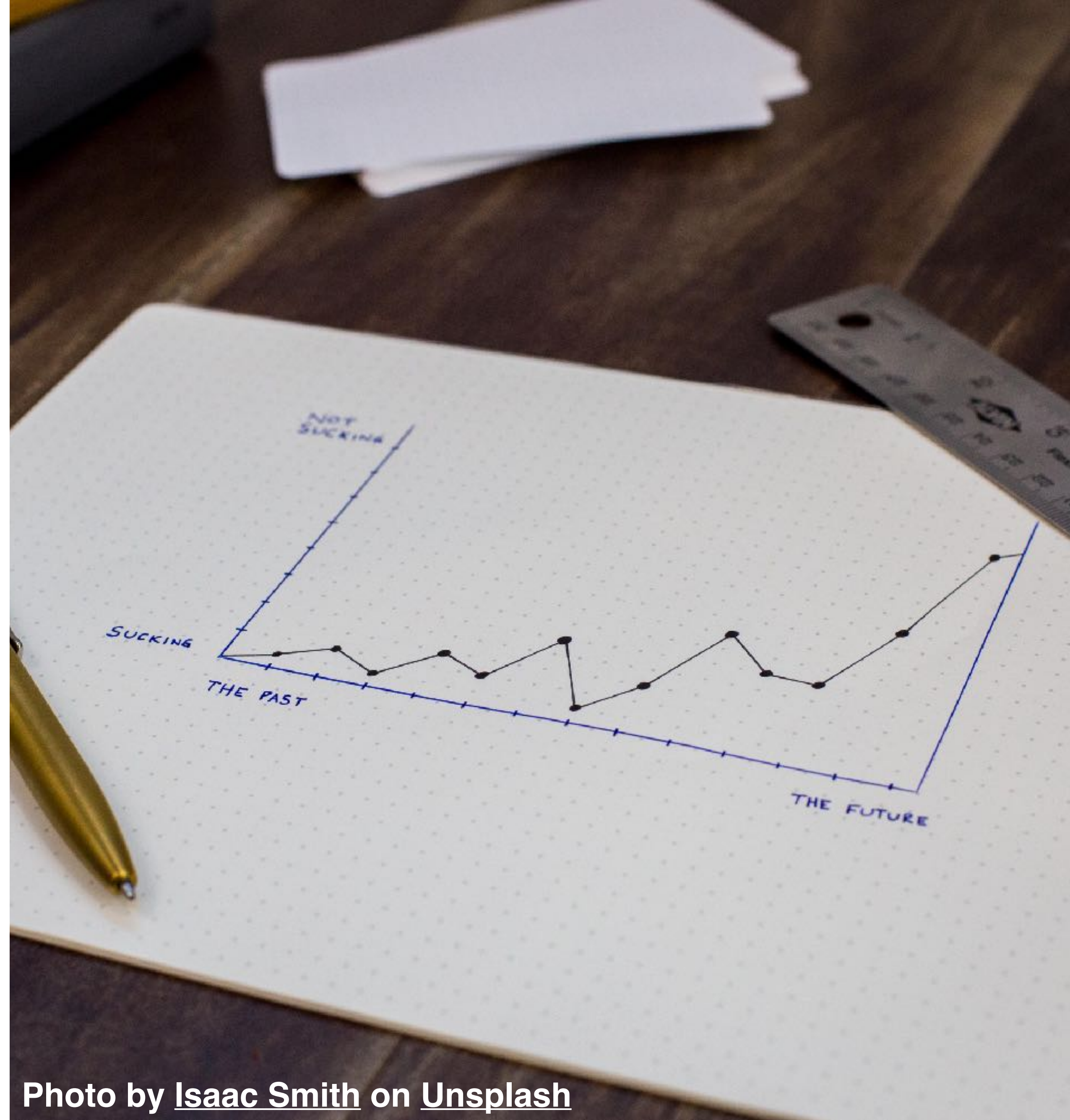







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# THANK YOU!

## Any Questions?

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