

How Governance Shapes Software?

By pomodoren, 2024-09

1. A quick look at governance

First idea

Organizations

Hierarchy

Cooperations

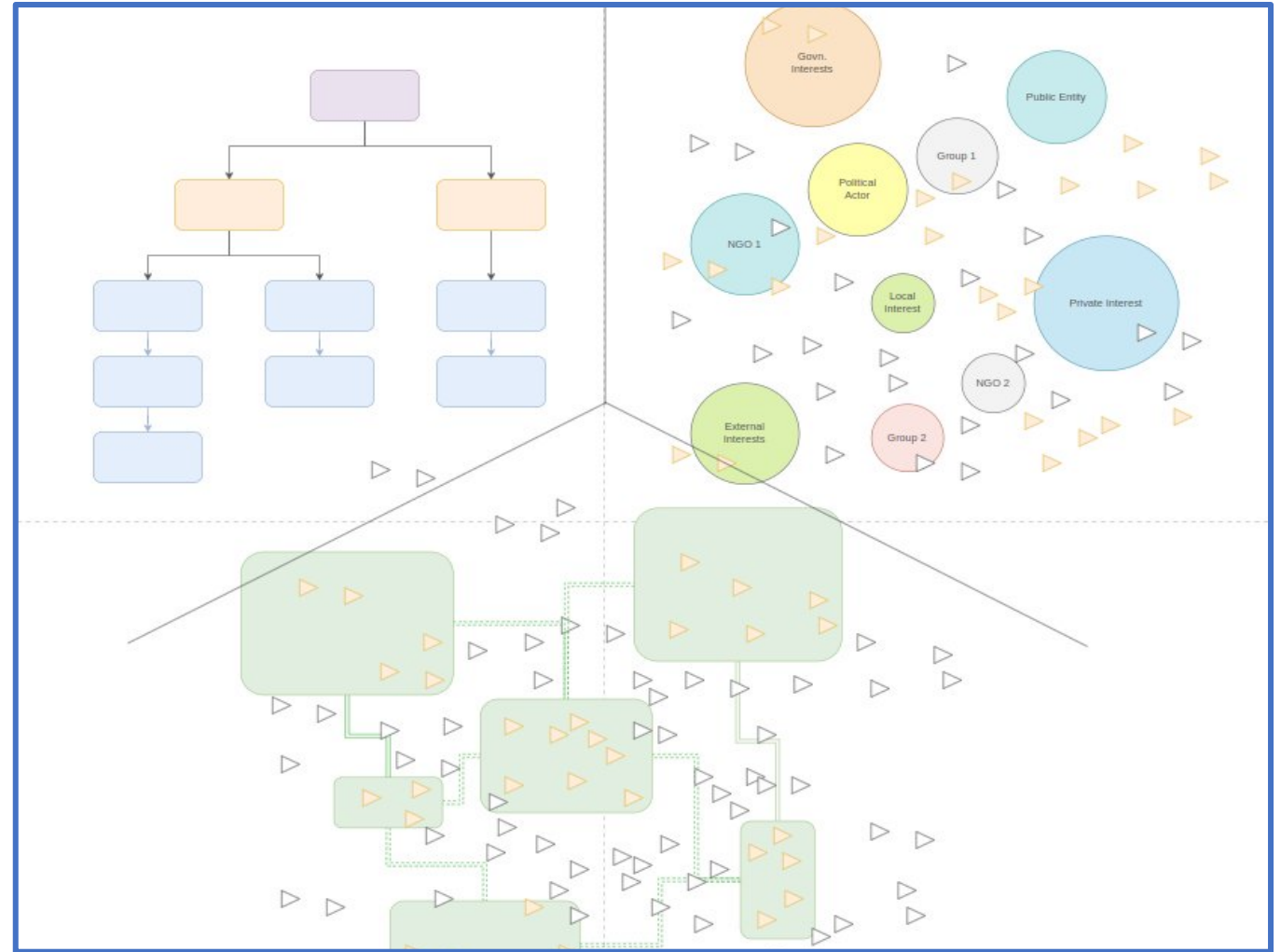
Negotiation

Networks

Alignment or Coordination

...

...



What is governance?

A set of regulatory principles and processes

Defines the character of a project

Assures structure and flexibility

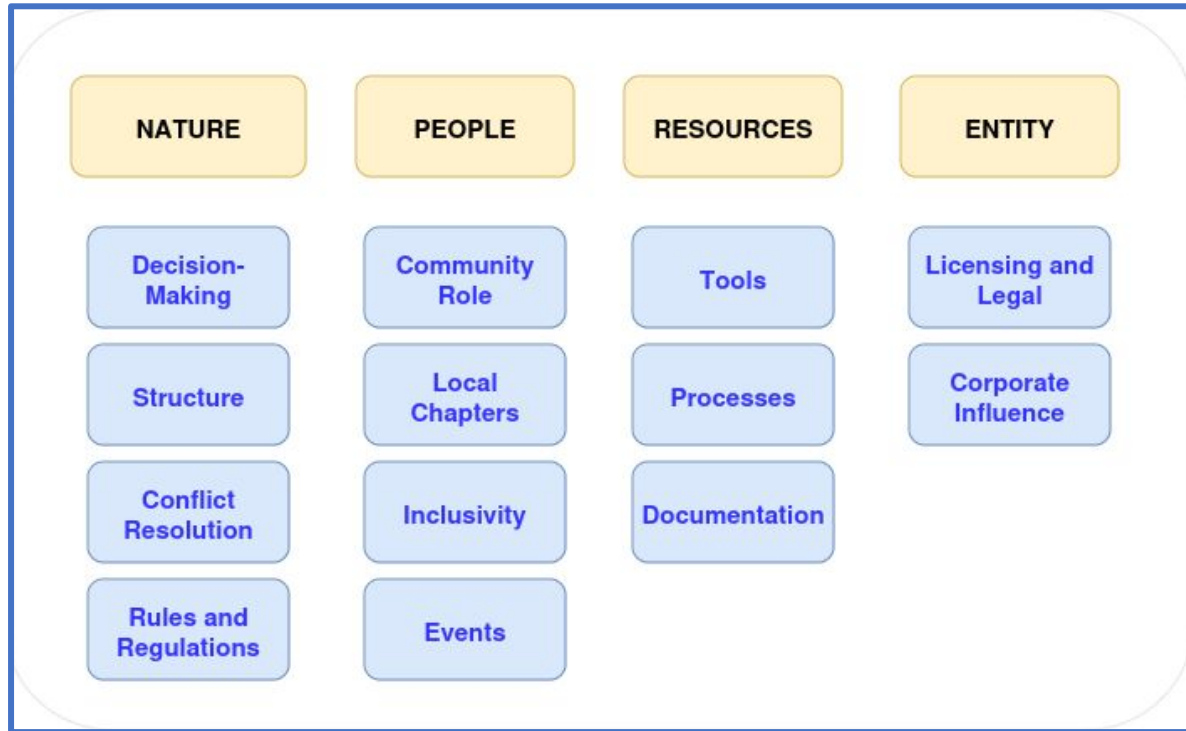
Respond to need, interest, and power

Inertia of the project to *achieve its mission*

While *adapting* to the ecosystem changes.

It is made of written and unwritten rules

Elements of governance



2. Why study Open-Source Software?

Initial ecosystem

1960s - Early collaboration when computation was expensive (MIT + AT&T)

1970s - Proprietary software came along, with commercial and restrictive access

1983 and **1985** - GNU Project and Free Software Foundation

Creation of the GNU General Public License - GPL

1990s - Open-Source as a business alternative

Creation of Linux and the expansion

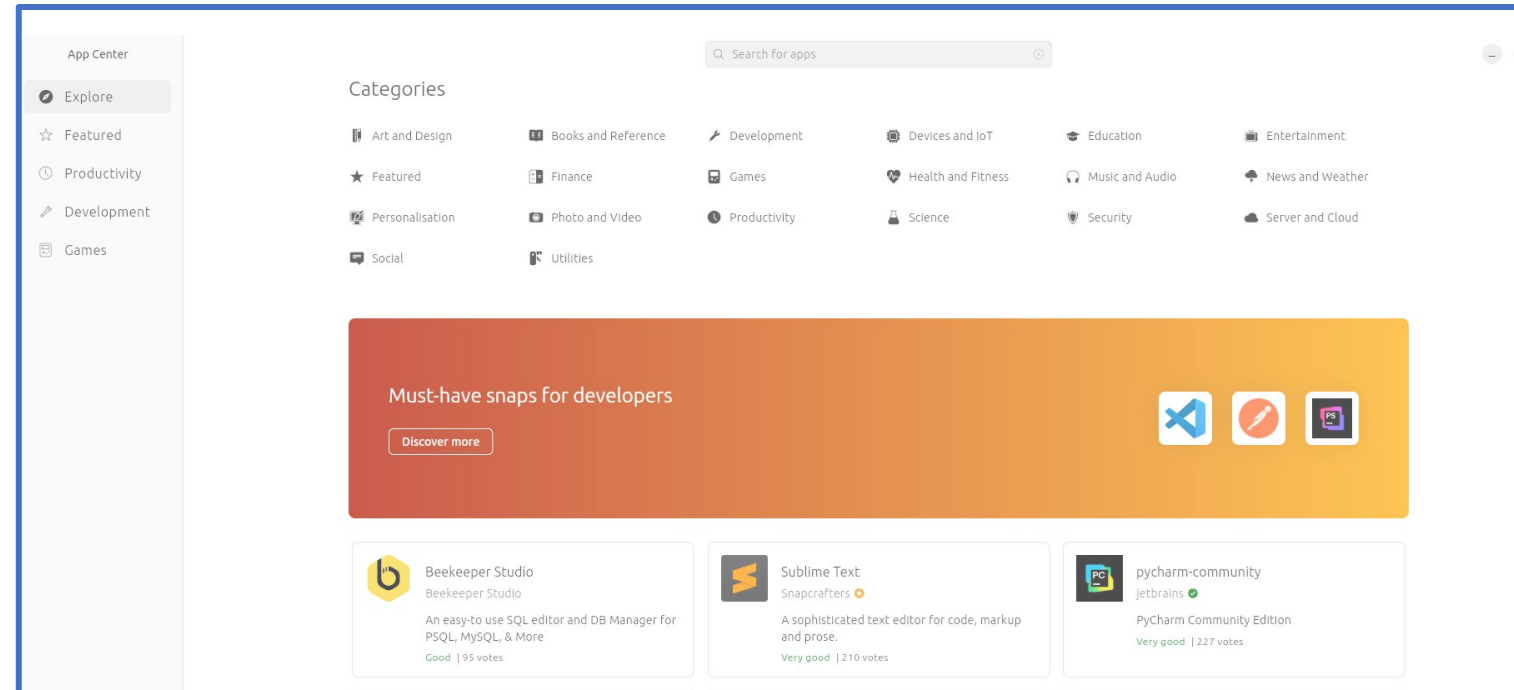
Why? Collaboration, Innovation, Security, Transparency, Independence, Ethics

The ecosystem today

Tools, communities, decisions - online
Various types of governance models

Prominent Open-Source Software

- *Linux* - Operating System
- *Apache HTTP* - Server
- *Git* - Version Control System
- *Docker* - Containerization Platform
- *Python* - Programming Language
- *TensorFlow* - ML framework
- *Wordpress* - CMS
- *LibreOffice* - Office Suite
- *PostgreSQL* - RDMS
- ...



Bug Description

See Mark's closure comment here: <https://bugs.launchpad.net/ubuntu/+bug/1/comments/1834>

Microsoft has a majority market share in the new desktop PC marketplace. This is a bug which Ubuntu and other projects are meant to fix. As the philosophy of the Ubuntu Project states, "Our work is driven by a belief that software should be free and accessible to all."

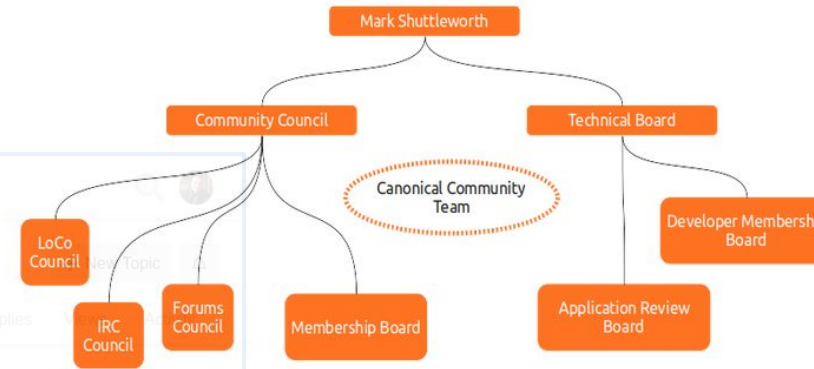
"Ubuntu software is free. Always was, always will be. Free software gives everyone the freedom to use it however they want and share with whoever they like. This freedom has huge benefits. At one end of the spectrum it enables the Ubuntu community to grow and share its collective experience and expertise to continually improve all things Ubuntu. At the other, we are able to give access to essential software for those who couldn't otherwise afford it - an advantage that's keenly felt by individuals and organisations all over the world."

* <http://www.ubuntu.com/project/about-ubuntu/our-philosophy>

Example governance in OSS

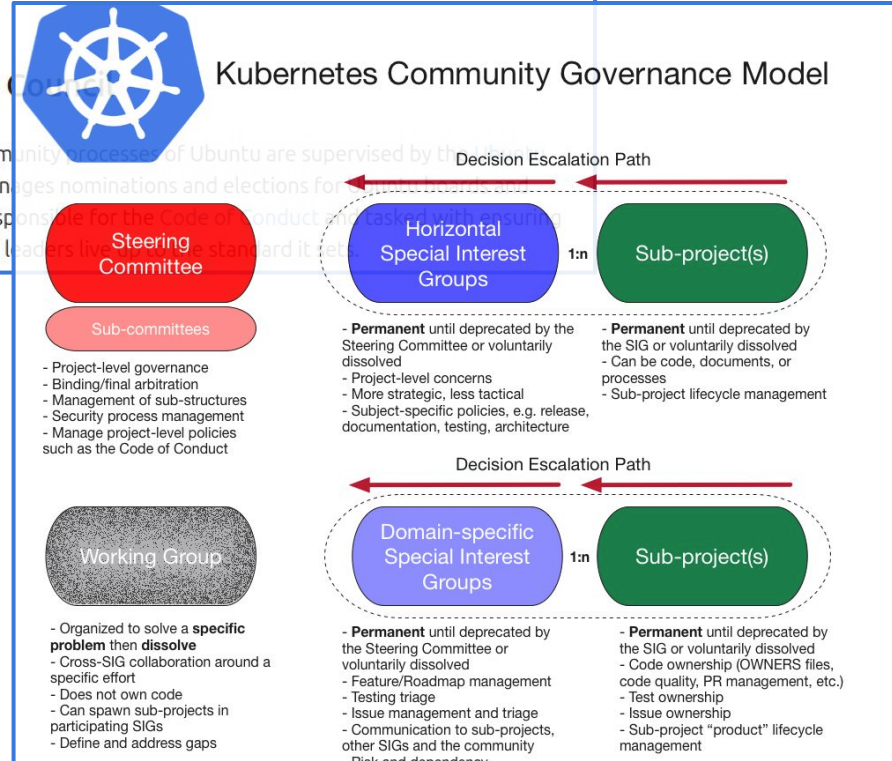
The screenshot shows the OpenStreetMap Community Forum interface. On the left is a sidebar with navigation links: Topics, My Posts, Participation guidelines, New user's guide, More, Categories (Help and support, General talk, Communities, Foundation), All categories, Tags (announcement, forum-policies, All tags), Messages, and Inbox. The main content area displays a list of forum topics under the 'Foundation' category, sorted by 'Latest'. The topics include 'About the Foundation category', 'Call for Speakers: Monthly Presentation at an OSMF Board Meeting', 'OSMF Local Chapter application - OSM The Gambia', 'Osmvideo.cloud68.co - Recent change regarding recordings', '2024 Board election - Submission of questions to candidates is open until 24 August at 23:59:59 UTC', 'Awareness on Membership software (CiviCRM) issues under Membership WG and Board review', and 'OSMF Board Elections: Confessions of Dissatisfied Voter'.

The current governance map of Ubuntu looks like this:



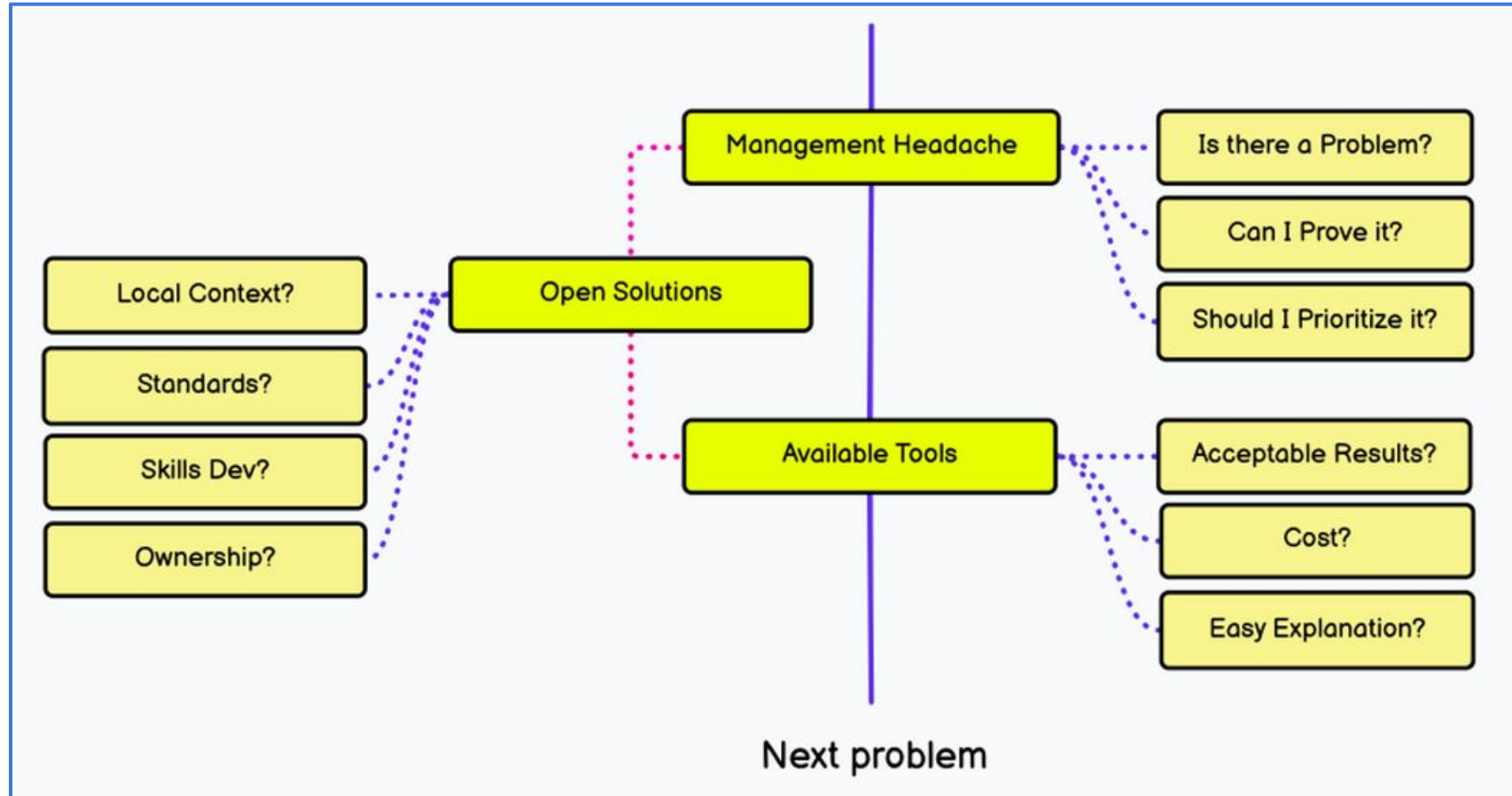
Ubuntu Community Governance

The social structures and community processes of Ubuntu are supervised by the **Community Council**, which manages nominations and elections for the community councils. The council is also responsible for the code of conduct and standard it sets.



3. A quick look at software

Choosing software?



Popularity Polls

Understand the user base

Check if major issues are present

Does it fit with the purpose?

Is it easy to use?

How does it stand to its competitors?

Does it change often?



Alternatives to GitLab

★★★★☆ 4.6 (1121) [Write a Review!](#)

[VIEW PROFILE](#) 



Product data verified by our Product Research Team and reviews moderated by our Reviews Verification Team. [Learn more](#)

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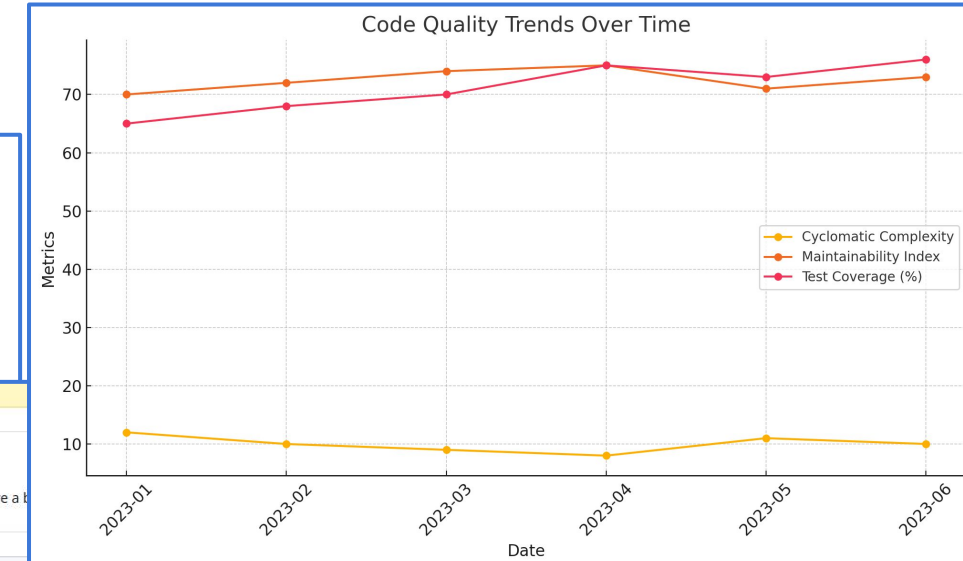
Top GitLab Alternatives

 GitLab Starting from: \$29/Per Month Pricing Model: Per User Overall Rating: ★ 4.6 (1121) Ease of Use ★ 4.4 Customer Service ★ 4.2 Features ★ 4.6 Value for Money ★ 4.5	 Airtable ↗ VISIT WEBSITE Starting from: \$20/Per Month Pricing Model: Per User Overall Rating: ★ 4.7 (2056) Ease of Use ★ 4.4 Customer Service ★ 4.4 Features ★ 4.5 Value for Money ★ 4.5	 GitHub VIEW PROFILE Starting from: Not provided by vendor Pricing Model: Per User Overall Rating: ★ 4.8 (6057) Ease of Use ★ 4.4 Customer Service ★ 4.4 Features ★ 4.7 Value for Money ★ 4.6	 Jira VIEW PROFILE Starting from: \$7.16/Per Month Pricing Model: Per User Overall Rating: ★ 4.4 (14575) Ease of Use ★ 4.1 Customer Service ★ 4.2 Features ★ 4.4 Value for Money ★ 4.3
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Check the working pace

The screenshot shows the QGIS GitHub repository page. At the top, it displays the repository name 'QGIS' as 'Public', along with statistics: 354 Watchers, 3k Forks, and 10.4k Stars. Below this, there's a search bar and a list of files and folders. The commit history shows a recent commit by 'nyalldawson and rouault' updating the source code for the QGIS abstract geopdf exporter, with 220361 commits and 87,908 commits in total.

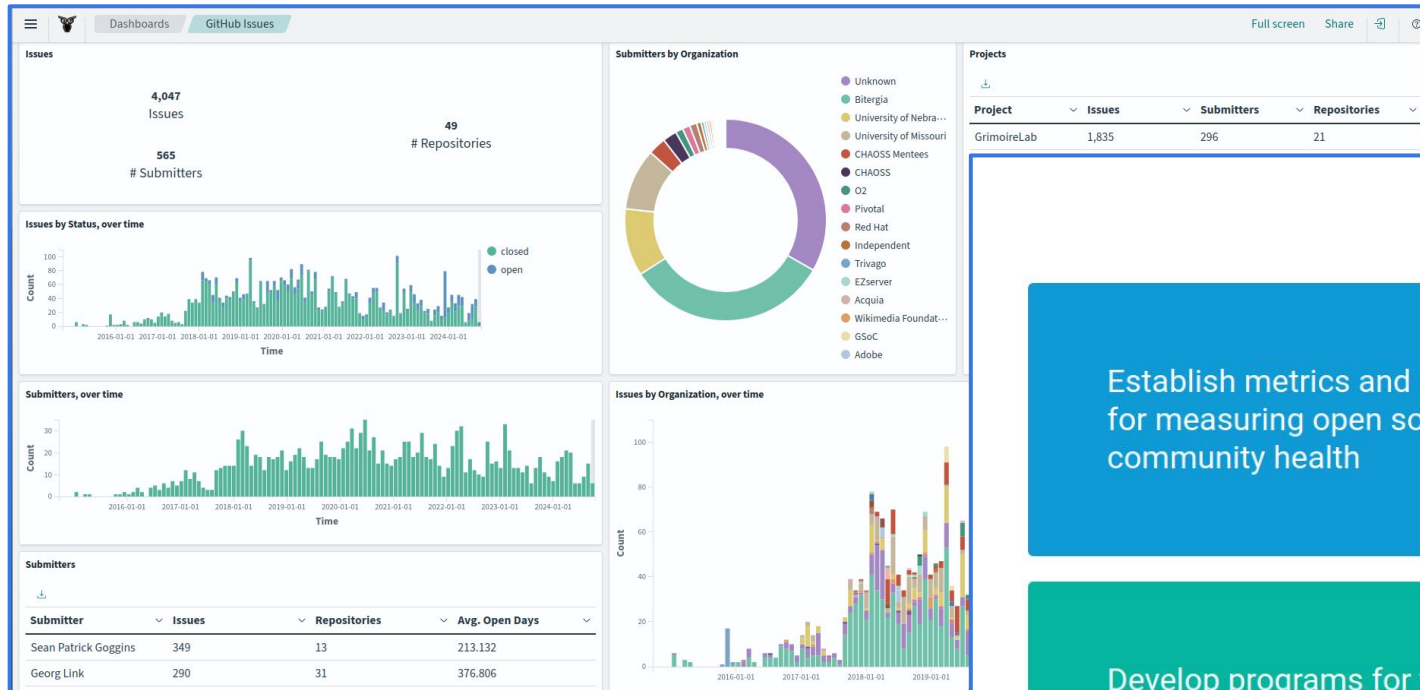
File/Folder	Description	Last Commit
.ci	apply osgeo4w patches	2 weeks ago
.docker	HANA: Upgrade EULA agreement to version 3.2	5 months ago
.github	Remove .github/CONTRIBUTING.md and update .github/...	2 weeks ago
.tx	adapt to new transifex client	last year
cmake	Use CMake's SQLite targets	last week
cmake_templates	[cmake] Use execute_process instead of deprecated EXE...	5 months ago
debian	debian packaging: adapt packaging of 3d python bindin...	2 weeks ago
doc	[api] Implementation of labeling engine rules	last week
editors	svg file reduced with svgcleaner	4 years ago
external	Replace sorting implementation	4 days ago
i18n	translation update for 3.38.0 from transifex	3 months ago
images	Add icon for labeling rules	last week
linux	appstream: Fix screenshot	2 months ago
mac	Qt Extras modules have been removed from Qt6	2 years ago



The screenshot shows the QGIS GitHub Issues page. It displays a list of open issues, with 4,611 open and 27,109 closed. The issues are sorted by 'Newest' and are filtered by 'is:issue is:open'. The list includes several issues related to bugs and feature requests, such as 'Bub/Crash opening a project in QGIS', 'Snowflake ODBC connection with auth:externalbrowser fails', and 'DB Manager - Offer to update raster overviews when the main raster is moved to another schema'.

Issue Title	Label	Author	Opened	Tasks
Bub/Crash opening a project in QGIS	Bug	rtidupree	2 hours ago	2 tasks
Snowflake ODBC connection with auth:externalbrowser fails	Bug, ODBC	MarcoPieters	8 hours ago	1 of 2 tasks
[mvt] Valid style could not be opened	Bug	pathmapper	10 hours ago	2 tasks done
Raster Calculator not working 3.34.10	Bug, Feedback	Pippo-90	yesterday	1 of 2 tasks
DB Manager - Offer to update raster overviews when the main raster is moved to another schema	DB Manager, Feature Request	walkermatt	yesterday	
DB Manager - Offer to update layer_styles when renaming or moving a table to another schema	DB Manager, Feature Request	walkermatt	yesterday	

Get into the metrics



CHAOSS Goals

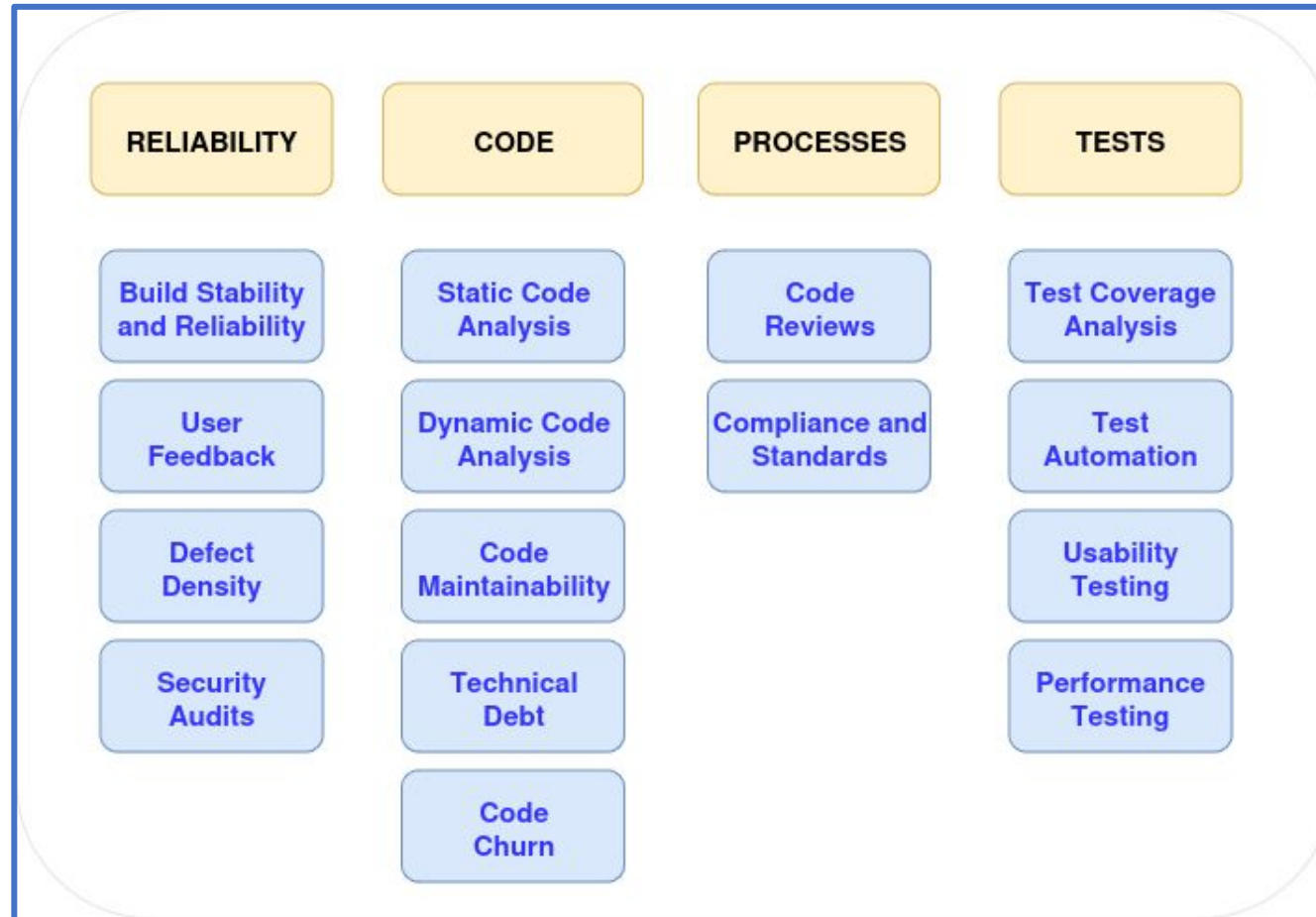
Establish metrics and models for measuring open source community health

Produce open source software and initiatives for measuring community health

Develop programs for the deployment of metrics not attainable through trace data

Work with global partners to shape how we understand open source community health

Elements of software quality



4. How does governance shape software? (some examples)

Linux (BDFL)

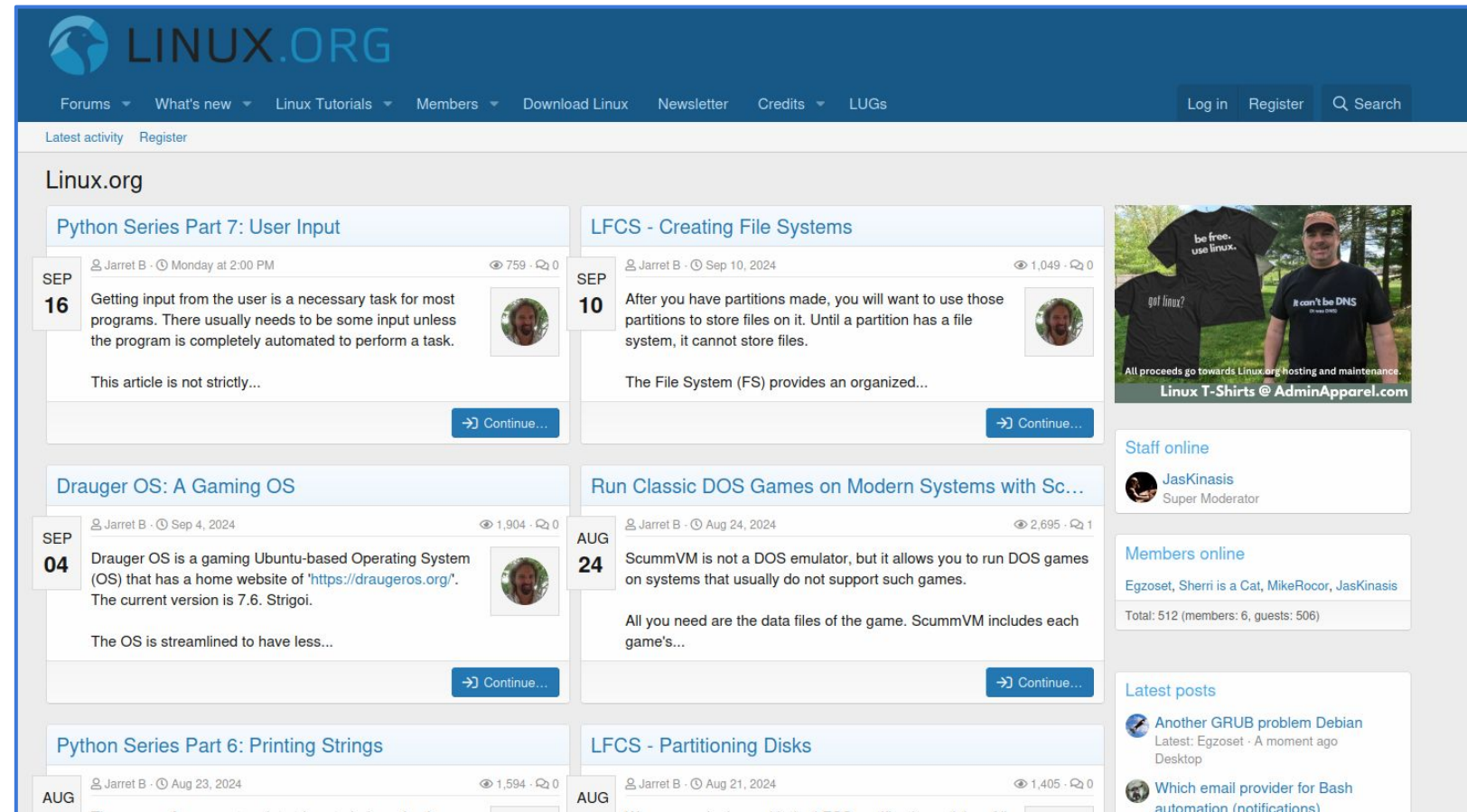
Meritocratic community-driven

Core maintainers impact important

Test coverage, build stability

Security audits, contributor activity

CoC issues



OpenStreetMap (Foundation model)

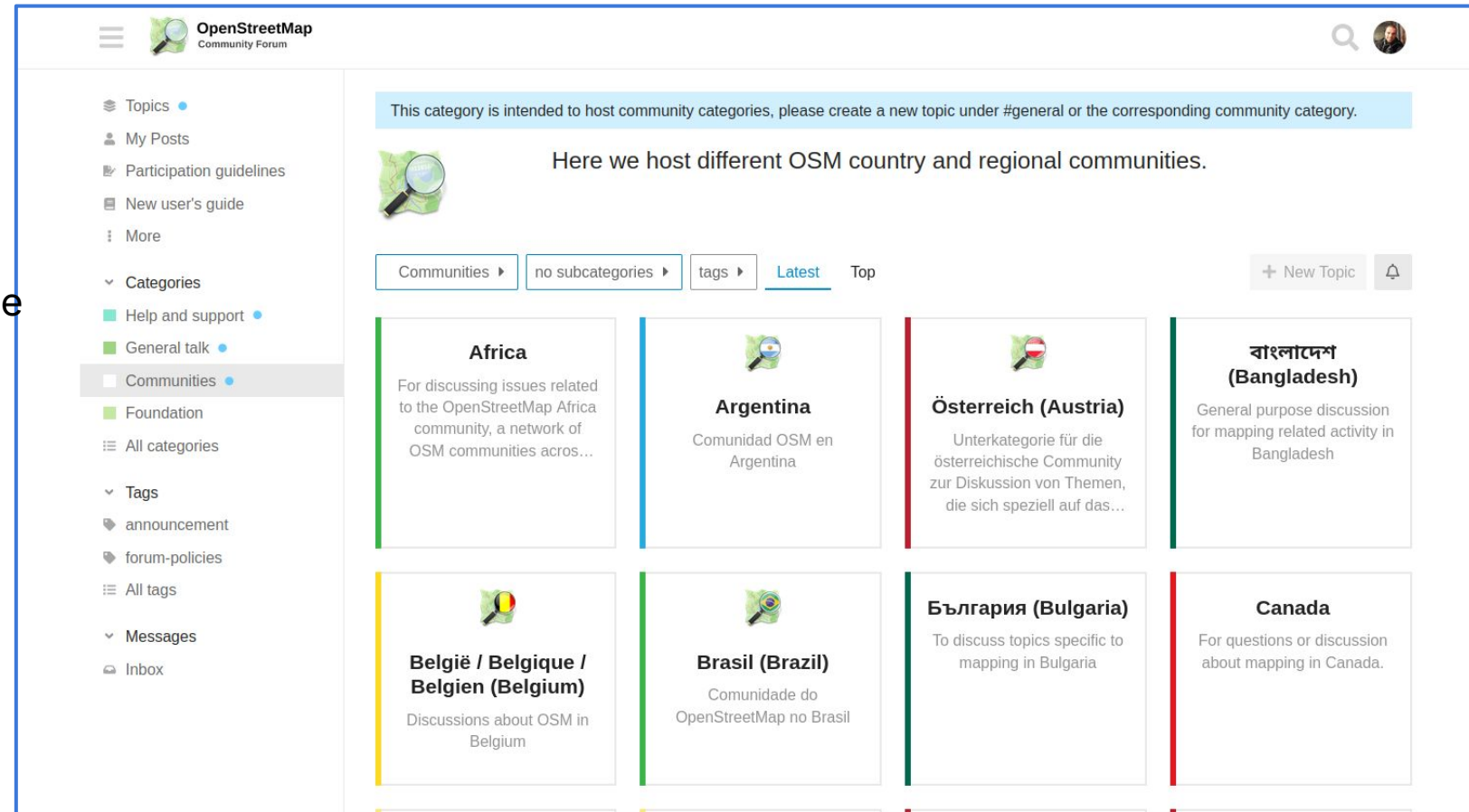
Non-profit foundation (OSMF)

Inclusivity, volunteer based

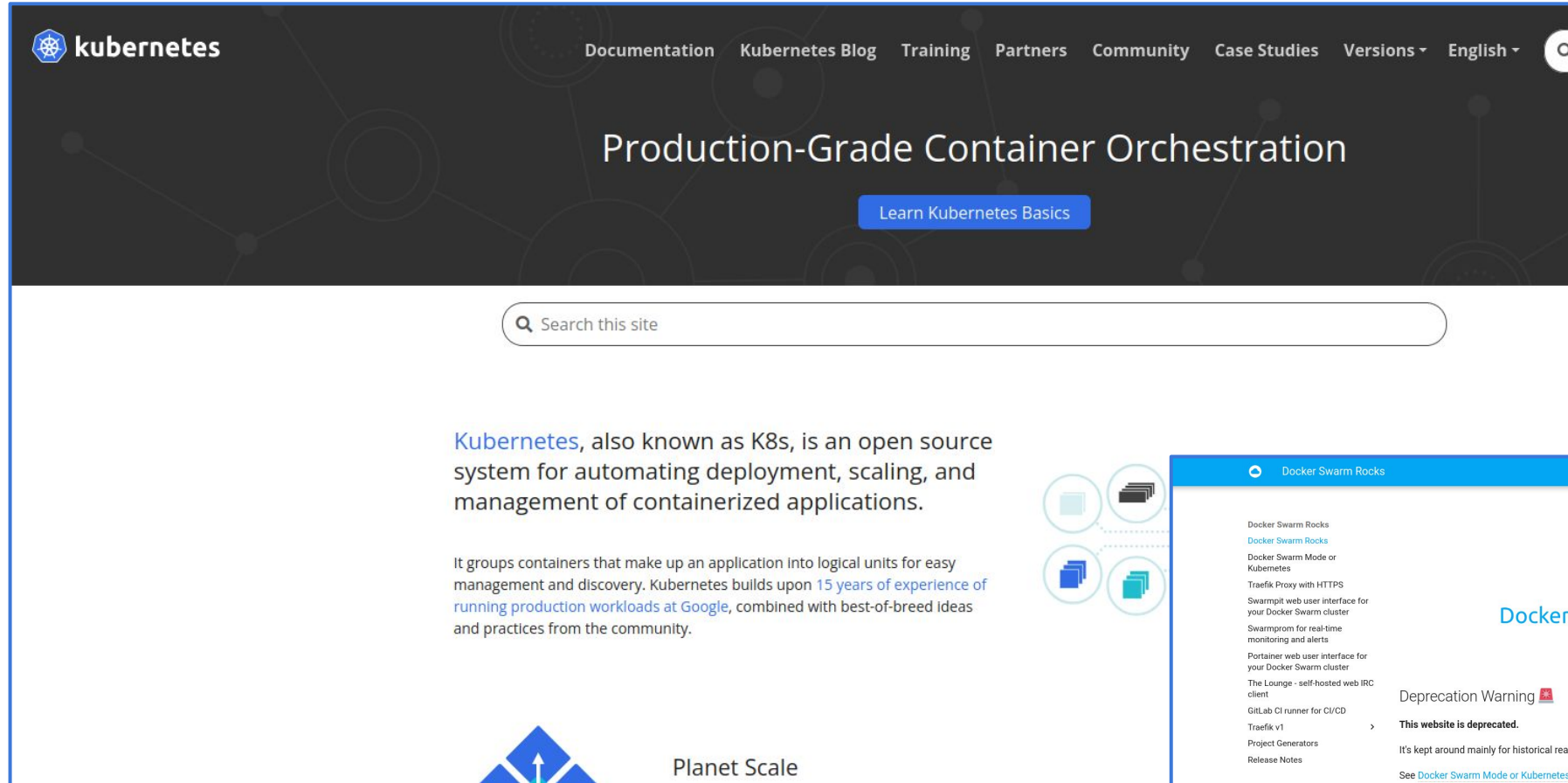
Data quality and accuracy, test-coverage

Contributor activity, documentation

Uneven quality of data across regions



Docker-Swarm vs *Kubernetes*



The screenshot shows the Kubernetes website with a dark header. The Kubernetes logo is on the left, and navigation links for Documentation, Blog, Training, Partners, Community, Case Studies, Versions, and English are on the right. The main heading is "Production-Grade Container Orchestration" with a "Learn Kubernetes Basics" button below it. A search bar is positioned above the main content area. The text describes Kubernetes as an open source system for automating deployment, scaling, and management of containerized applications, mentioning its 15 years of experience at Google. A "Planet Scale" logo is at the bottom.

kubernetes

Documentation Kubernetes Blog Training Partners Community Case Studies Versions English

Production-Grade Container Orchestration

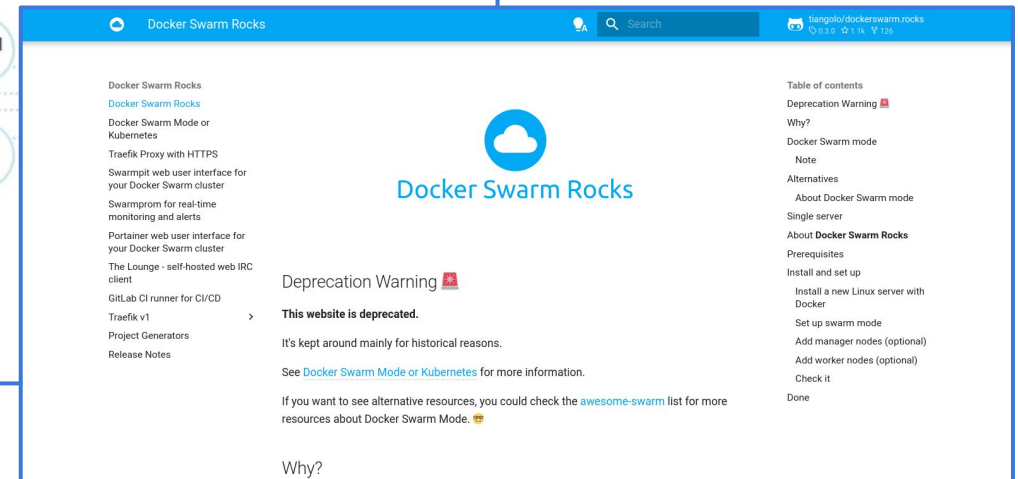
Learn Kubernetes Basics

Search this site

Kubernetes, also known as K8s, is an open source system for automating deployment, scaling, and management of containerized applications.

It groups containers that make up an application into logical units for easy management and discovery. Kubernetes builds upon 15 years of experience of running production workloads at Google, combined with best-of-breed ideas and practices from the community.

Planet Scale



The screenshot shows the Docker Swarm Rocks website. The header is blue with the site name and a search bar. The main content area features a "Deprecation Warning" and a "Why?" section. A sidebar on the right contains a table of contents and a list of links.

Docker Swarm Rocks

Search

Table of contents

Deprecation Warning

Why?

Docker Swarm mode

Note

Alternatives

About Docker Swarm mode

Single server

About Docker Swarm Rocks

Prerequisites

Install and set up

Install a new Linux server with Docker

Set up swarm mode

Add manager nodes (optional)

Add worker nodes (optional)

Check it

Done

Deprecation Warning

This website is deprecated.

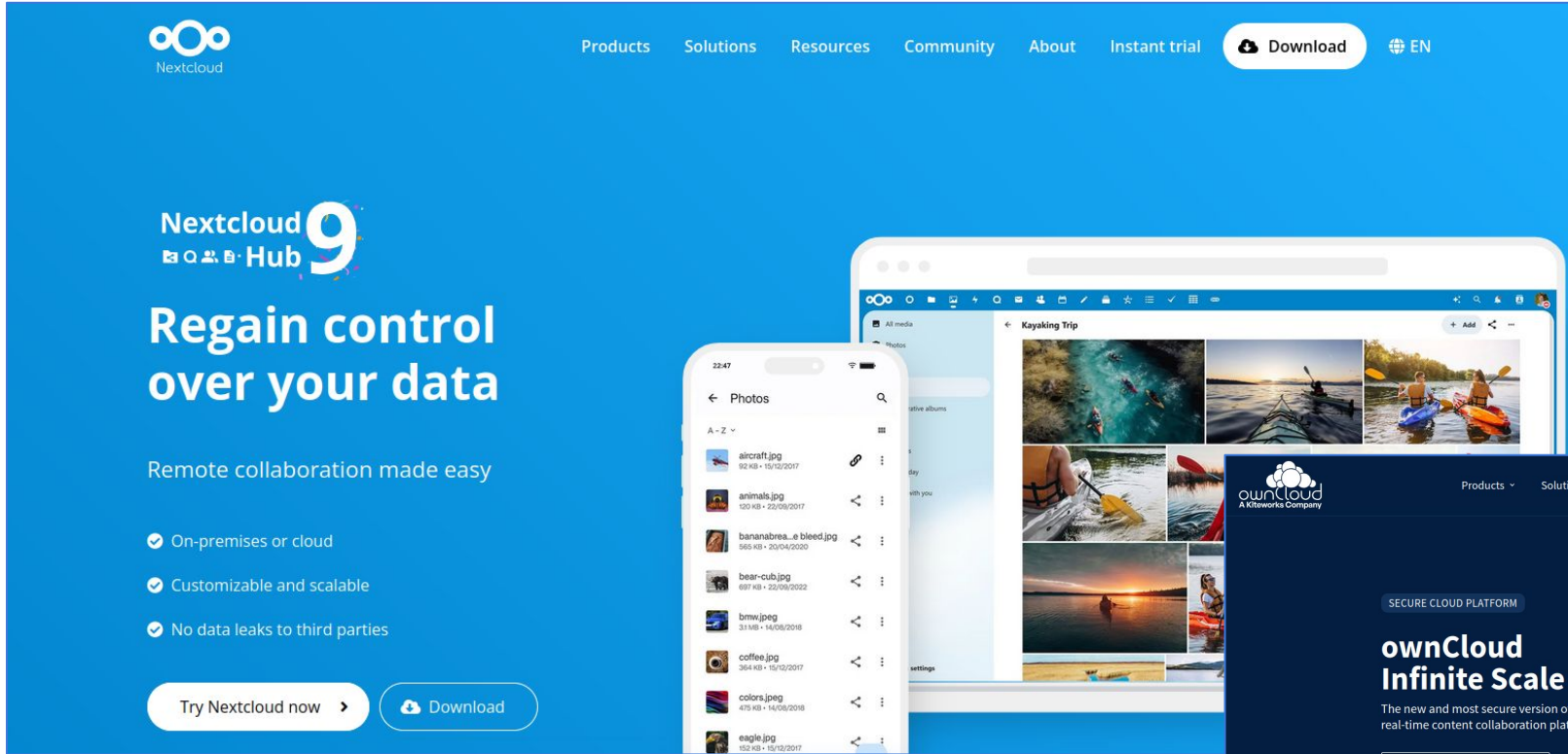
It's kept around mainly for historical reasons.

See Docker Swarm Mode or Kubernetes for more information.

If you want to see alternative resources, you could check the awesome-swarm list for more resources about Docker Swarm Mode.

Why?

Nextcloud vs ownCloud



Nextcloud 9 Hub

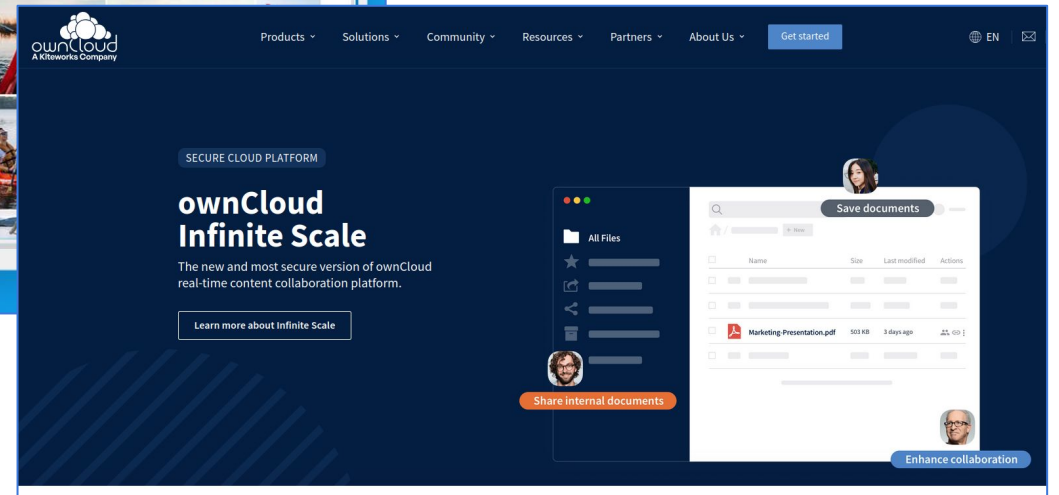
Regain control over your data

Remote collaboration made easy

- ✓ On-premises or cloud
- ✓ Customizable and scalable
- ✓ No data leaks to third parties

[Try Nextcloud now](#) [Download](#)

The banner features a blue background with the Nextcloud logo at the top left. Navigation links include Products, Solutions, Resources, Community, About, Instant trial, Download, and EN. The main text promotes regaining control over data and lists three key benefits. A smartphone and tablet are shown displaying the Nextcloud interface, with the tablet showing a 'Kayaking Trip' photo album.



ownCloud A Kiteworks Company

Products Solutions Community Resources Partners About Us Get started

EN

ownCloud Infinite Scale

SECURE CLOUD PLATFORM

The new and most secure version of ownCloud real-time content collaboration platform.

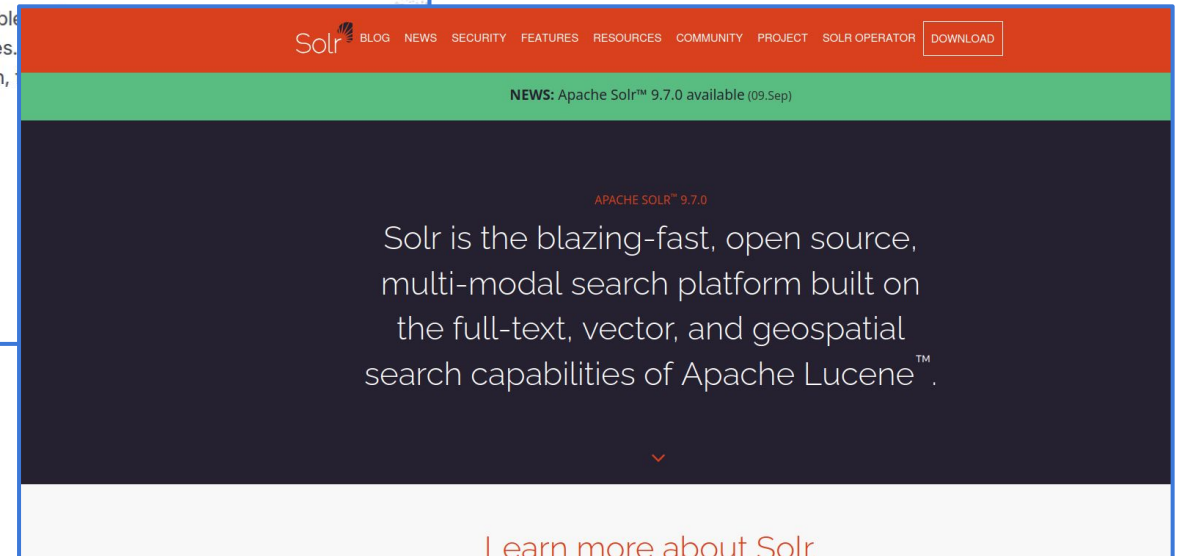
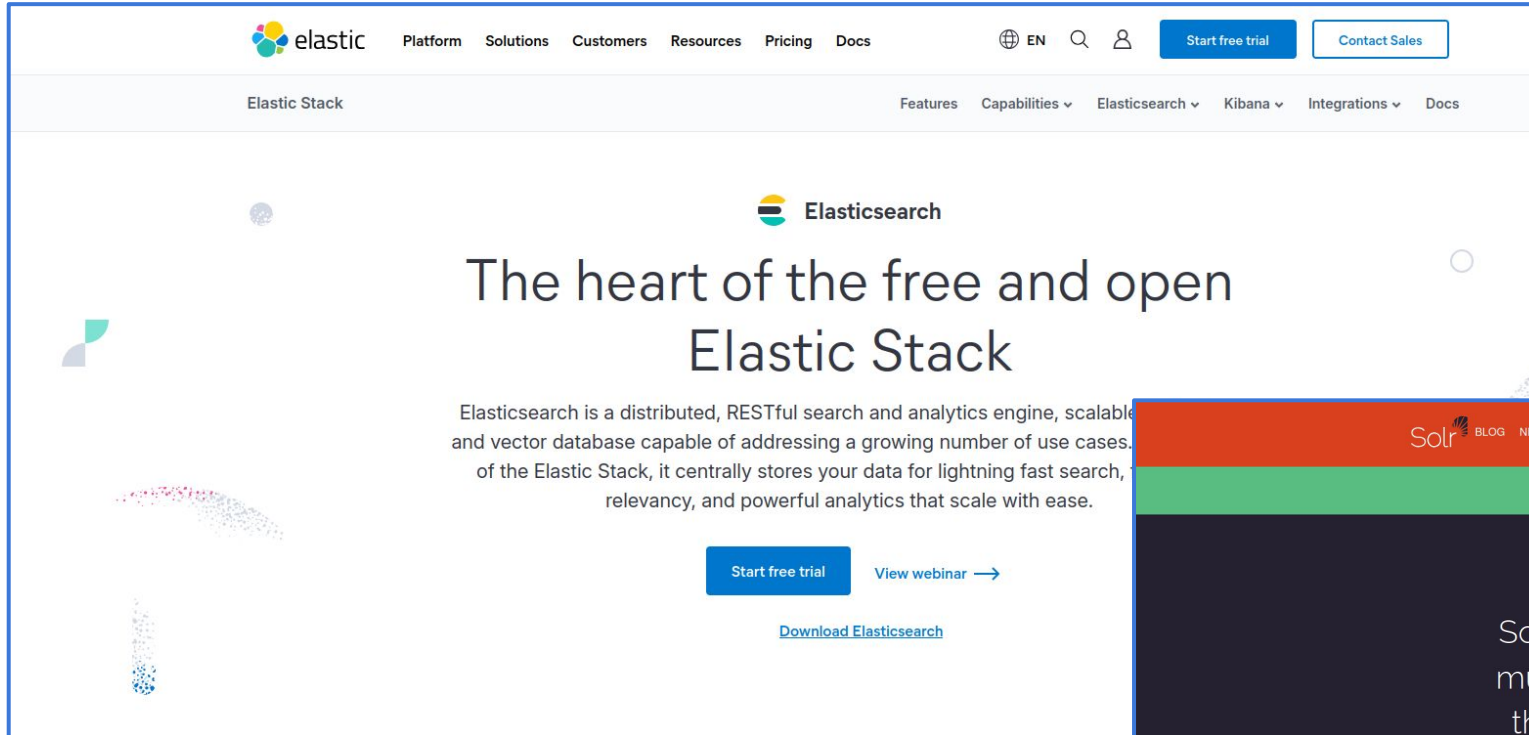
[Learn more about Infinite Scale](#)

[Share internal documents](#)

[Enhance collaboration](#)

The banner features a dark blue background with the ownCloud logo at the top left. Navigation links include Products, Solutions, Community, Resources, Partners, About Us, Get started, and EN. The main text promotes the secure cloud platform and lists three key benefits. A smartphone and tablet are shown displaying the ownCloud interface, with the tablet showing a 'Marketing Presentation.pdf' document.

Elasticsearch vs Apache Solr



Organizers

presentation by:
pomodoren

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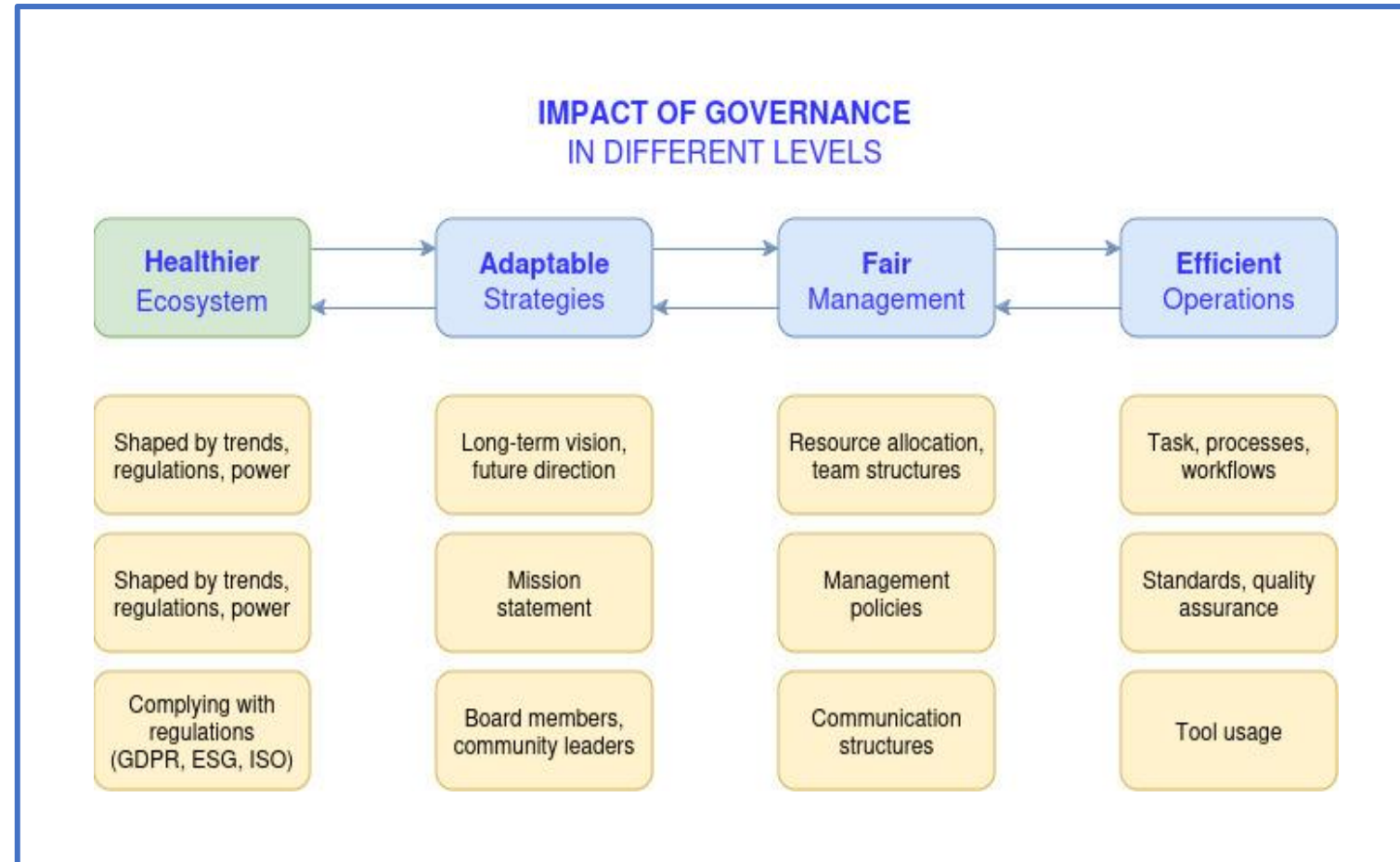
Understanding impact

For *private sector*, to adapt to ecosystem
To respond to the market needs

For *advisors*, to allow flexibility
To have a clear vision and values

For *managers*, to evaluate pace and needs
To communicate and delegate properly

For *operations*, to understand scope
To perform and provide feedback



Example governance in OSS

Benevolent Dictator For Life (BDFL) Model:

- *Main decision-making:* centralized, community provides input, disputes resolved by BDFL, Veto power.
- *Examples:* Python (Van Rossum), Linux (Linus Torvalds)

Meritocratic Model:

- *Main decision-making:* core group of maintainers, based on consensus or majority voting.
- *Examples:* Apache Software Foundation - Kafka, PostgreSQL

Community/Consensus-Driven Model:

- *Main decision-making:* open-discussions, voting and rough consensus
- *Examples:* Debian, Kubernetes, Rust

Foundation-Based Model:

- *Main decision-making:* Governing board and technical steering committees
- *Examples:* Eclipse, Cloud Native

What governance is not?

- **Management:** It does set the rules for decision-making, but does not try to achieve operational goals
- **Control:** It does define accountability and checks and balances, but does not impose itself top-down

- **Bureaucracy:** It does change organizations, but does not overly impose with excessive formality
- **Policy:** It does define context for policies, but does not create, implement or impose them

- **Leadership:** In small-to-medium businesses is initiated by founders, but it can change during development
- **Consensus-Building:** It is not about democracy-based decision-making, it is context dependent