

# Company's leadership and influence in open source projects



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## Overview

The need to understand how open source software is built has never been greater. Today, 90% of IT leaders use open source for their organizations and value streams, and they need to quickly identify risks and opportunities to succeed.

One of the biggest software providers, works with Bitergia to understand:

- The value stream management within collaborative environments
- The company's leadership and influence in open source projects.

This case study shows the different questions addressed and the metrics used to do so.



# Disclaimer

*This use case comes from real data from a real organization.*

*However, people names and affiliations have been anonymized to ensure their privacy*

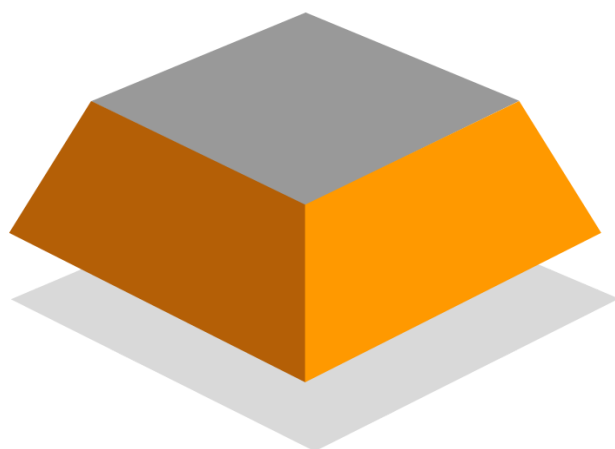
# Table of Contents

Understand Company's leadership and influence in open source projects with Bitergia Analytics

Goal 1: Value stream management to improve project sustainability

Goal 2: Leadership and influence within open source projects

Solution: Kanban Events and Label Events dashboard



# Understand **Company's leadership and influence** in open source projects

The need to understand how open source software is built has never been greater. Today, 90% of IT leaders use open source for their organizations and value streams, and they need to quickly identify risks and opportunities to succeed

## Decision-making goals

Effective management of open source communities requires a solid strategy with specific business goals. One of our customers, one of the biggest software providers, wanted to:

**Goal 1:** Understand value stream management within collaborative environments to improve project health and sustainability.

**Goal 2:** Balance its leadership and influence within the open source projects they engaged in.

They hired Bitergia to answer questions that were critical for reaching these goals. This use case explains the different questions addressed and the metrics used to understand both, the value stream management within collaborative environments and the company's leadership and influence in open source projects.

# Value stream management to improve project sustainability

A company's main focus should not be on the flow of work through a process but on the flow of value. **Being able to manage value streams** within the DevOps lifecycle, provides the company with clear visibility of the progress of work and highlights bottlenecks and forms of waste. **Identifying waste and effort** (non-value added) is something the company needed to analyze the value stream.

## **Understanding the importance of value streams for project health within collaborative environments**

When working within collaborative environments, both value streams and non-value added processes can also come from "outside" the team. Thus, we want to enable the community to thrive and make effective contributions. Since value-stream shows waste and effort, we are also getting useful insights about the health of a project in terms of engagement and intake because:

- By removing waste and effort, we allow the community to thrive (engagement)
- By removing waste and effort, we allow the company to get a higher value from the community contributions (intake)

Therefore, value-stream mapping is an interesting approach to monitor and improve the health and sustainability of projects that are backed up by the power of the community.

## Defining the questions and alligning it with the right metrics

For Goal 1, the customer asked the following questions and Bitergia provided specific metrics to help answer those questions:

### ? Questions



### Metrics

How much effort is needed to deal with issues and pull requests coming from internal teams?	<p>Trend of evolution of the number of issues assigned to a label</p> <p>Trend of the evolution of the average median time a label remains assigned to an issue</p>
How long does an issue remain on the Kanban column?	Trend of the evolution of the average/median time spent in a kanban column
How long does it take for an issue to go through a set of kanban columns?	Trend of the evolution of the average/median time spent in a set of kanban columns
Are there any bottlenecks in the kanban process?	<p>Trend of the evolution of the average/median time spent in a kanban column</p> <p>Trend of the evolution of the average/median time spent in a set of kanban columns</p>
Are blockers solved in a reasonable time?	Trend evolution of the average/median time spent in the kanban columns used for blocked tasks
How long does an issue have to wait to be processed?	Trend evolution of the average/median time spent in the kanban columns used as a backlog for tasks that need to be scheduled.
How many issues are getting fixed by the community?	Trend of the evolution of the number of issues fixed by community pull requests
Is the community proposing fixes for existing issues or proposing other changes?	<p>Number of issues fixed by community PR</p> <p>Number of PR merged sent by the community not associated with any known issue</p>
Are there any substantial differences between the community and partners?	<p>Trend of the evolution of the number of issues assigned to a label per organization</p> <p>Trend of the evolution of the average time a label remains assigned to an issue per organization</p>



# Leadership and influence within open source projects

Knowing who the top organizations are that lead the projects' development process and finding out if your organization is one of them, is a key information for Bitergia's customer to strategically decide which projects to engage in, learn from, and contribute to.

For Goal 2, the customer wanted to balance its leadership and influence in open source projects and asked the following four questions to which Bitergia provided metrics as answers:

## Questions



## Metrics

Who is leading the issue management process?	Trend of the evolution of labeling events per organization
	Trend of the evolution of the number of unlabeled events per organization
Who are the most participative users answering issues and pull requests?	Number of users' comments on issues and pull requests created by others, by user.
Which are the organizations fixing more issues?	Number of issues fixed by pull requests by organization
	Trend of the evolution of the average/median time spent in a set of kanban columns
What is the activity level of an organization?	Trend of the evolution of the number of issues assigned to a label per organization
	Trend evolution of the number of issues fixed by community pull requests by organization
	Number of contributions

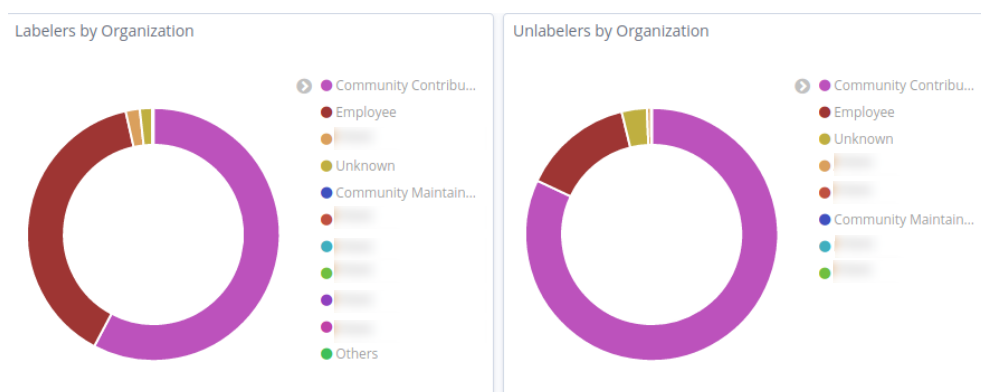
## Solution: Kanban Events and Label Events dashboard

Bitergia provided the company with a custom “Kanban Events” and “Label Events” dashboard, which shows the activity on each of their kanban columns and answers all the previous questions. Let’s see some of them:

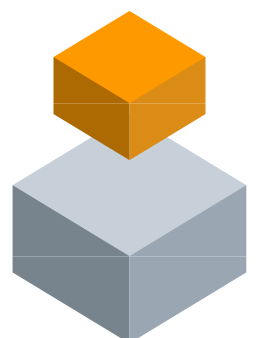
### Trend of the evolution of labeling events per organization

As the issue management process is based on labels, we need to understand who is actually behind managing those labels, because label assignment is key to guarantee the efficiency of the process and avoiding bottlenecks.

The use of labels for tagging issues and pull requests is a common feature in the most used issue management systems. This metric relies on that feature to retrieve the number of labelling and unlabeling events produced when users assign or unassigned labels to items.



*Labelers/unlabelers charts focus on the organizations adding and removing labels. This counts each time a label is added or removed across all issues for a specified timeframe, showing how active different kinds of community members are in managing issues.*



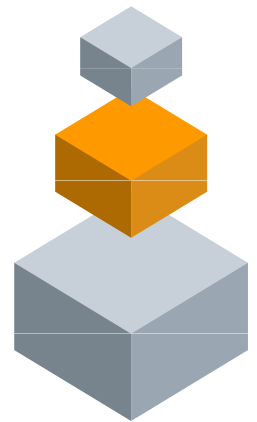


Labels duration (in days)

Search...

Labels	Avg. duration
waiting for release	7.915
version: Patch	8.49
version: Minor	11.343
version: Major	59.964
up for grabs	0

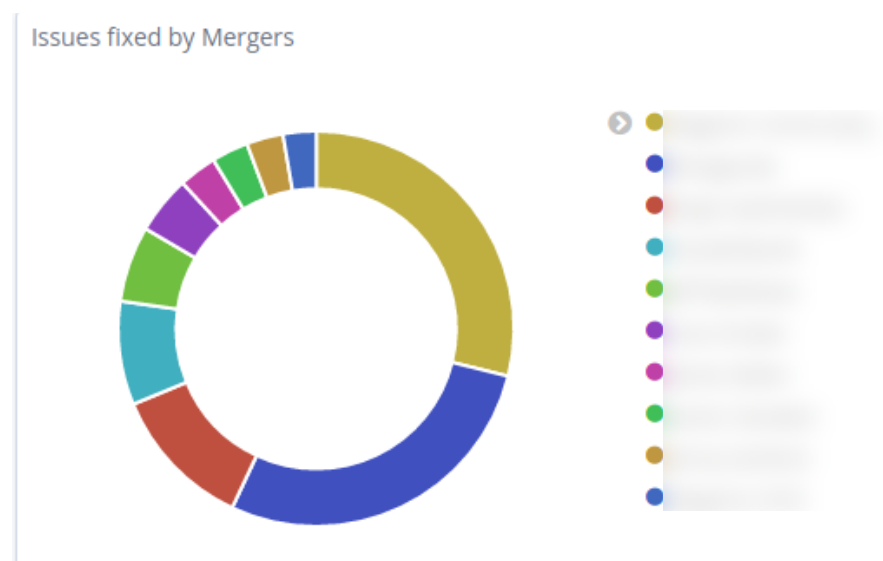
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Labels duration shows the average number of days that a label is assigned to an issue. A longer duration means delays in the value stream.

## Number of issues fixed by pull requests by organization

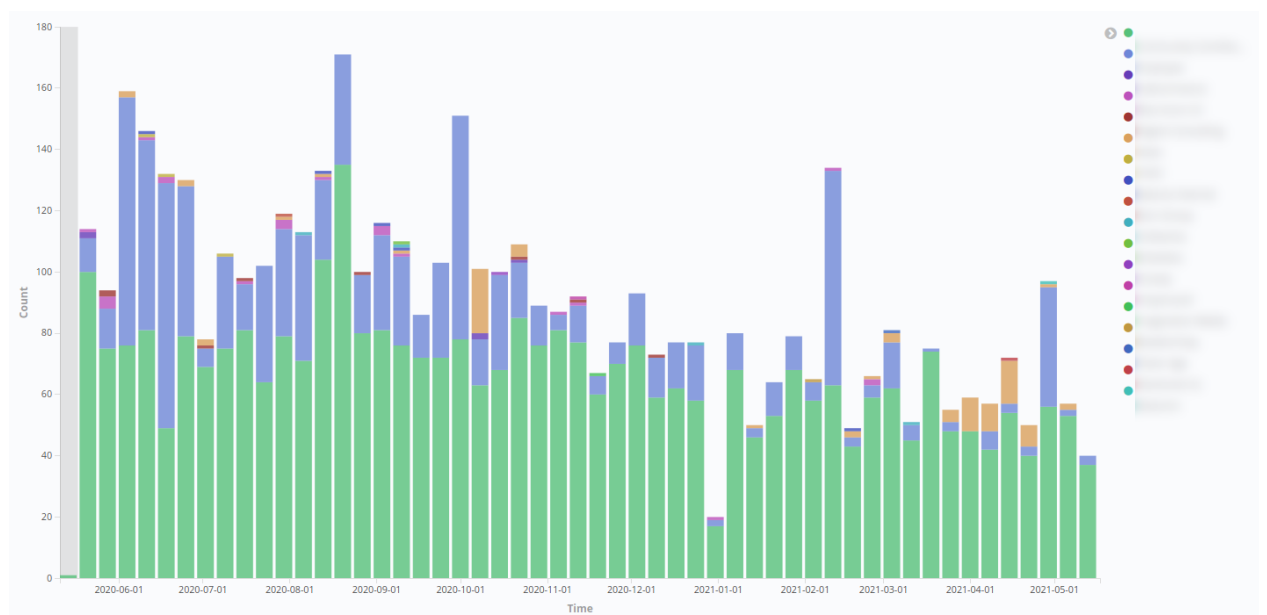
Understanding whether the project depends mainly on a small set of organizations can be really useful for different things. Sometimes it unveils hidden strong dependencies from companies that are using the project and the project managers do not even know.



Issues fixed by mergers chart shows the different contributors who merged issues (fixed issues)

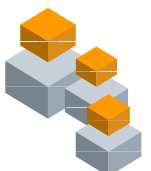
## Trend of the evolution of the number of issues assigned to a label per organization.

Reviewing the activity level of different organizations could also help avoid overloading certain teams. It is also important to get insights at this level that will allow us to drill down into the data to discover other factors that could explain that possible overload



*This graph shows the number of issues across time assigned to a label and divided per the different organizations. organizations are divided between employee contributors and non-employee contributors*

*While used together, both kanban and label dashboards gave the company a deep understanding of their value stream mapping status and leadership influence.*



# About Bitergia

Bitergia helps companies improve the ROI of their software development projects by providing tools and knowledge to improve decision-making. It specializes in analyzing software development projects and its core platform is 100% open source.

The Bitergia team has 15+ years of experience in research focused on collaborative software development methodologies and software development quality models. Our specialized team has been working with a wide variety of companies and organizations that had a need for actionable insights and better understanding of software development community and processes.

