

2018 TIDELIFT PROFESSIONAL
OPEN SOURCE SURVEY RESULTS

How to make open source work better for everyone

9 key insights from the 2018 Tidelift
professional open source survey

July 2018

TIDELIFT

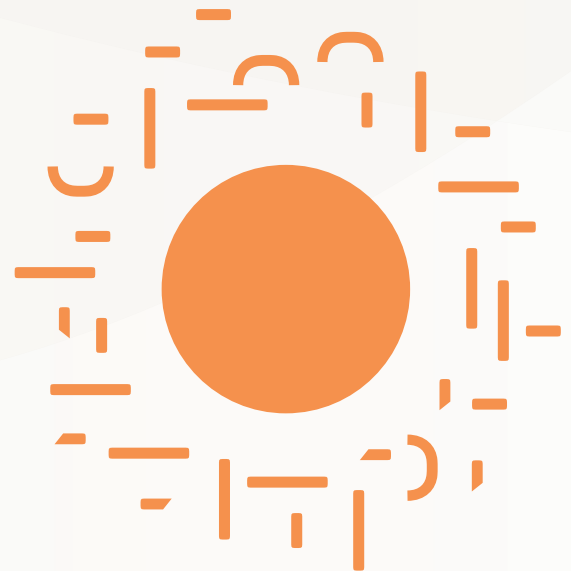
INTRODUCTION

What does professional open source look like?

Earlier this year, we launched our first professional open source survey. Our goal? To gain deeper perspective about what can be done to make open source—especially as it is used in professional settings—work better for everyone. We wanted to better understand what professional users of open source look like and what matters to them. And we wanted to understand the needs, problems, and passions of those who create and maintain the software they use.

Our hope was that we could find some common ground, a win-win for both those who use and maintain open source software.

We received over 1,200 responses from individuals across the globe, representing professional users and open source developers alike. What exactly did we learn about professional use of open source? Let's dive in!

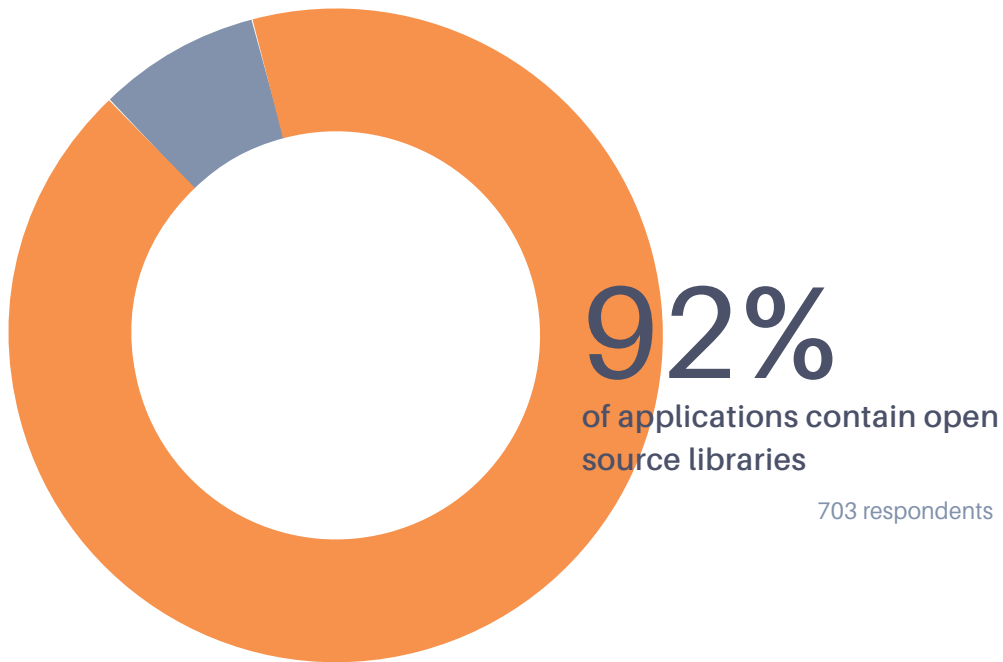


INSIGHT 1

Open source is everywhere

We had a pretty good sense from our prior experiences that open source is now, well... *everywhere*—a part of nearly every application environment. Data from the survey confirms this.

According to those we surveyed, 92% of their applications contain open source libraries. In fact, more than two thirds of survey respondents said that 100% of their applications make use of some open source dependencies. Even those that didn't report the 100% figure still said that the majority of their applications have open source components.



What does this mean? Open source is critical to the commercial software development process. It's truly ubiquitous.

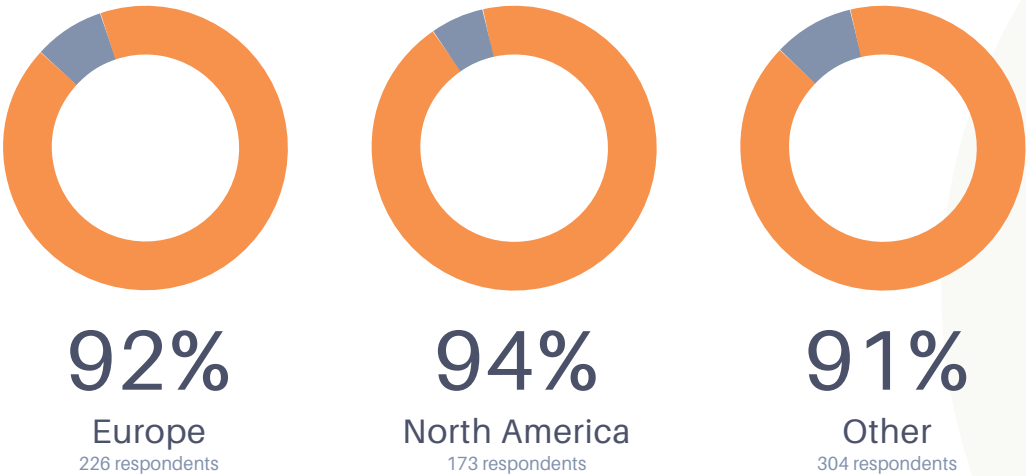
How else does this ubiquity manifest itself? Further breaking down the data, we can see that this reliance on open source isn't unique to a certain geographic subset of developers, but rather, it can be seen worldwide.



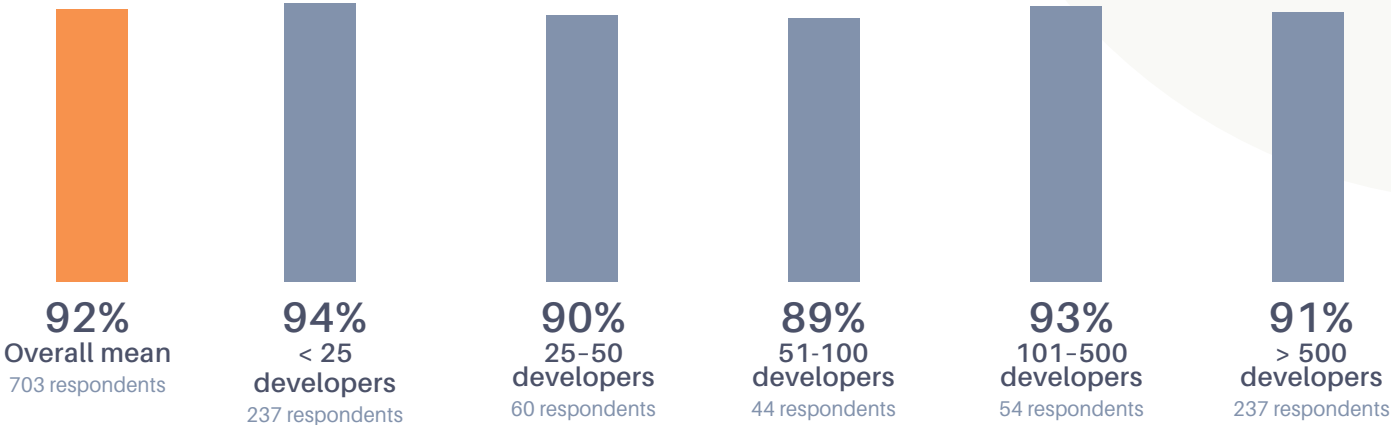
Whether looking at Europe or North America (where many of our participants live), or in the collection of responses from the rest of the world, the data remains consistent: open source components are included in almost every single application built by commercial developers, regardless of where it is being built.

Open source has also penetrated companies of all sizes, from those with small development teams to those with massive scale. On average, respondents across companies of all sizes used open source software in 92% of their applications. Take a look:

Percent of projects containing open source libraries by region



Average percentage of projects using open source by company development team size



INSIGHT 2

Professional users want maintenance, an active community, timely bug fixes, and security—in that order

One thing we really wanted to understand from this survey is how professional users of open source evaluate open source libraries. What do they care about most? And do those who currently pay for commercial open source distributions value different things than those who don't pay?

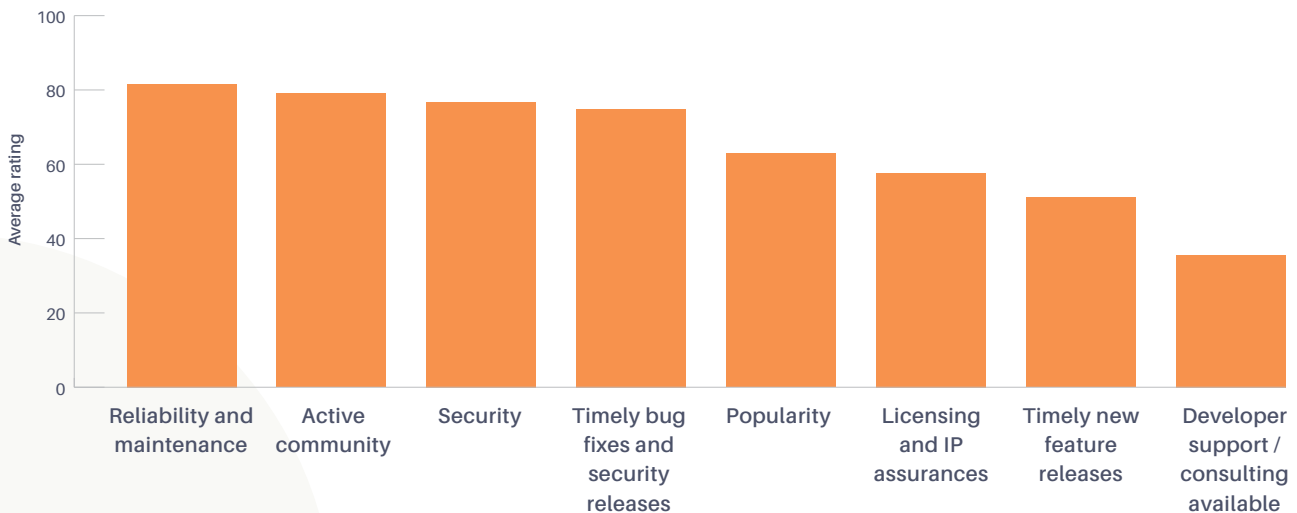
When looking at the overall sample, our respondents consistently ranked the same four factors as the most important when evaluating open source libraries. Here's what they want:

- Software that is **reliable and well maintained**
- Software that has an **active community** using and supporting it
- Software that is **secure**
- Software with maintainers who provide **timely bug fixes and security releases**

The chart below shows how they ranked each of the factors we asked about:

Most important factors when evaluating open source libraries

550 respondents



Respondents rated an active community as being over 20% more important than the popularity of a project.

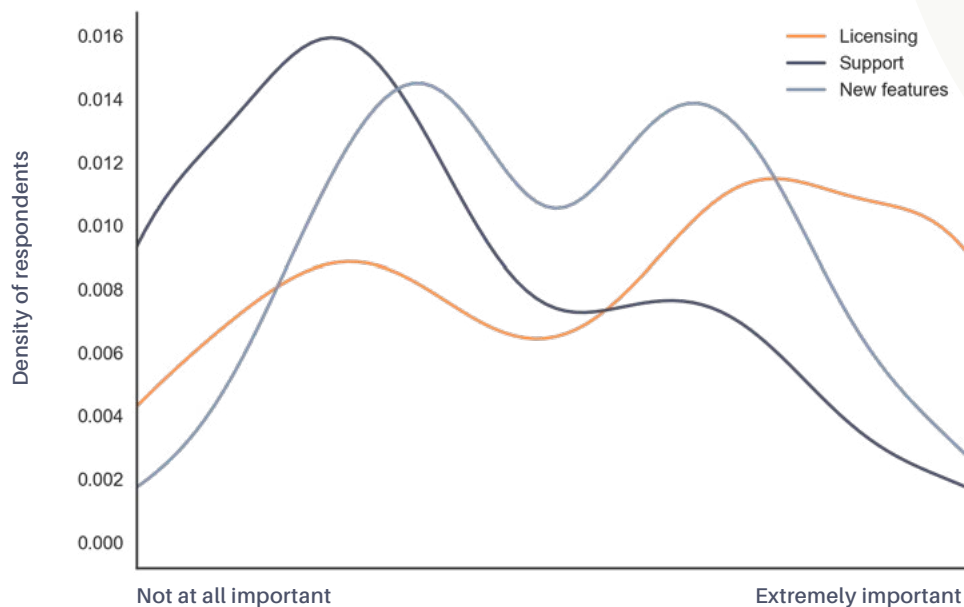
We found it interesting that respondents were less worried about the overall popularity of the project (so long as it is maintained), and, in fact, strongly differentiate between an active project and a popular one, rating an active community as being over 20% more important than the popularity of a project. This came as a surprise, as activity is often a function of popularity.

Taking this further, respondents placed the least weight on licensing and IP assurances, timely new feature releases, and developer support and consulting. But the story is not that simple, so we looked into these factors a bit deeper.

The graphic below demonstrates how some professional users care a lot about certain factors of their open source libraries, specifically licensing and IP assurances. In more detail, the bimodal curves all have a lower mean importance rating, but they have two groups of respondents, and one group sees each factor as rather important. Particularly for licensing, which a number of respondents rated as being nearly crucial.

Importance of licensing, support, and new features

485 respondents





Looking first at support and new features, we see that only a small group of respondents saw these two factors as top reasons to select an open source package: only 9% and 13% of respondents ranked either of those, respectively, within their top three most important factors. So despite their bimodal distributions, neither evoked particularly strong opinions when selecting an open source package.

More interestingly, however, was the variance in responses about the importance of licensing and IP assurances. Unlike support and new feature development, there was a large contingent of respondents who considered legal assurances to be crucial: 24% of respondents ranked this factor as their most important (or tied for their most important) criterion when evaluating open source libraries.

Diving into this group of respondents who *really* value legal assurances, we see something quite compelling: within the third of respondents who ranked licensing and IP assurances the highest, we find 55% of ALL respondents who work for companies with development teams larger than 500 people. What does this mean? There may be a wide range of responses when it comes to the importance of licensing when evaluating open source libraries, but it is disproportionately important to enterprise-scale companies looking to guarantee organizational compliance.

One additional thing we were interested in looking into more deeply was whether people who pay for open source care about different things than those who don't. We found no significant differences between the two groups—both those who do and don't pay agreed on the order of every single one of these evaluation criterion. Maintenance, active community, security, and timely bug fixes are, by and large, the most important factors for commercial users when evaluating open source libraries.

INSIGHT 3

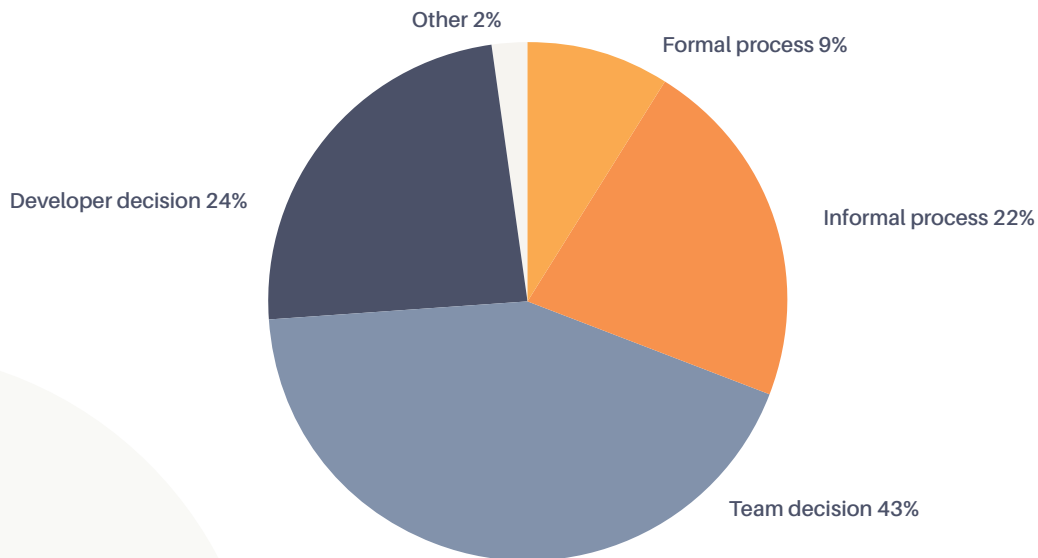
Only 9% of organizations have a formal process for how to evaluate open source dependencies

With open source being used in almost all professional applications, and with different development teams valuing different aspects of the software they use, we wanted to know how these teams *actually* decide which libraries to use. Do they have a process that the entire company employs? Or is it up to the individual developer, with little visibility and consistency across teams?

What we found was, by and large, companies lack processes—particularly formal processes—around how they evaluate or approve their open source dependencies. Two-thirds of respondents said they rely on the individual team, or even the individual developer, to vet open source packages for their application. Only 9% (!) of companies have a formal process for introducing new open source dependencies.

How do companies evaluate open source dependencies?

653 respondents



But what distinguishes the companies with formal processes for evaluating open source from those that rely on teams or individuals?

For starters, 49% of teams with a formal process for introducing new open source dependencies also reported that they currently pay for a commercial open source distribution. In fact, companies paying for open source support are almost three times as likely to have a formal process for introducing dependencies. Conversely, companies that don't pay for open source support are much less likely to have a formal process for introducing dependencies.

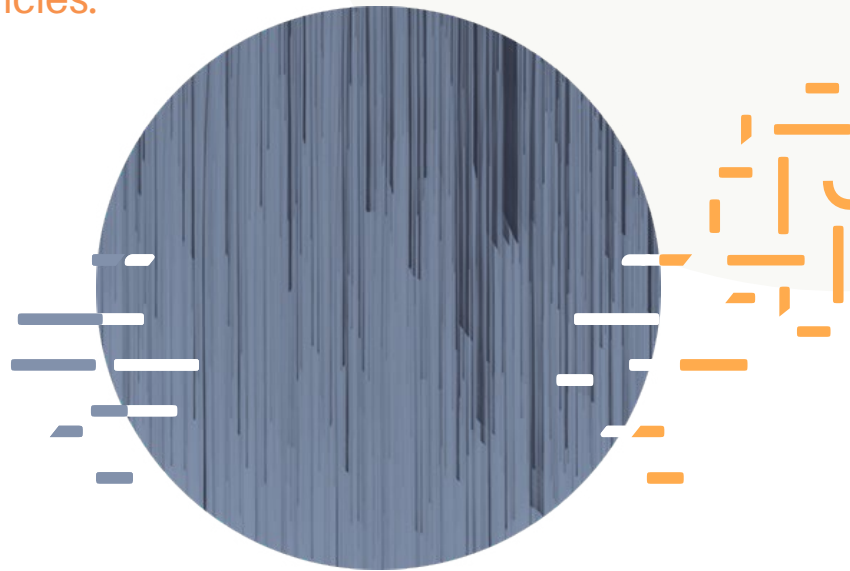
Diving in a little deeper, we see that 47% of companies with a formal open source evaluation process have more than 500 employees working in software development. This means big companies—or at least companies with big development teams—are over four times more likely to have a formal process for evaluating open source. This is pretty intuitive. As is the fact that larger teams seem particularly averse to individual developer decision-making regarding open source dependencies: only 2.7% of these larger teams have developer-level policies.

Lastly, what do these companies value in their open source? Those with formal processes are almost three times as likely to want to pay for licensing and IP assurances around their open source than those without processes.

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By and large, companies lack processes around how they evaluate or approve their open source dependencies.

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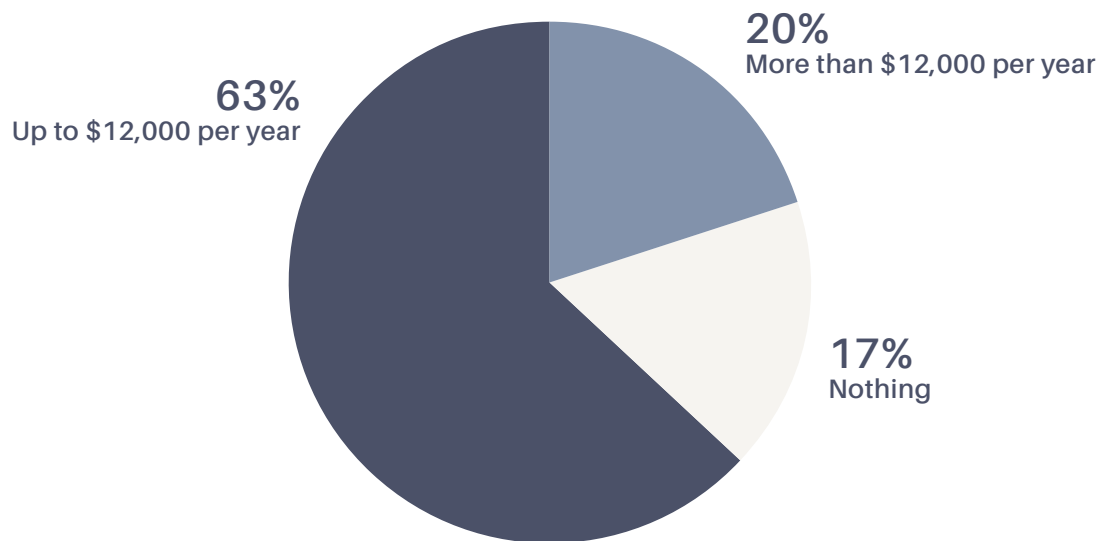
INSIGHT 4

83% of professional users will pay for supported open source

We asked our respondents if they would consider paying for well managed, supported, licensed, and secured versions of all the open source they already rely on—and if so, how much? The results were striking: 83% percent of respondents stated that they would pay for such guarantees.

83% of professional users will pay for supported open source

469 respondents

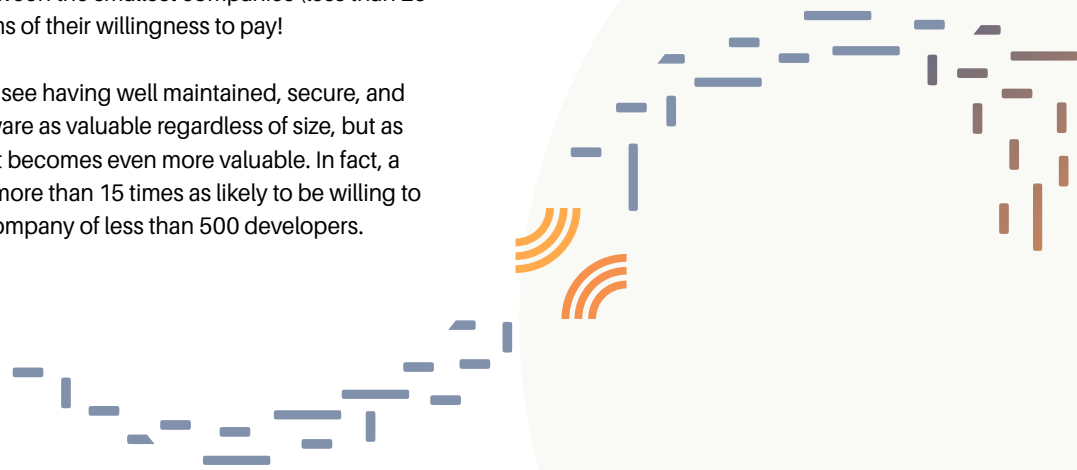


What happens if we drill down into the demographics of these respondents? First, we see that whether or not a company already pays for commercial open source support is a key indicator of whether they would consider paying for well managed, supported, licensed, and secure open source: these companies are more than twice as likely to pay over \$12,000 per year.

Not shockingly, supported open source software is more valuable to larger companies. They were four times more likely than the average respondent to be willing to pay over \$120,000 per year.

But this doesn't mean that it's only large companies that would be willing to pay for better assurances and support for their open source software. In fact, there was only a 0.5% difference between the smallest companies (less than 25 developers) and all the others in terms of their willingness to pay!

This not only means that companies see having well maintained, secure, and properly licensed open source software as valuable regardless of size, but as the development team gets bigger, it becomes even more valuable. In fact, a company of over 500 developers is more than 15 times as likely to be willing to pay over \$120,000 per year than a company of less than 500 developers.



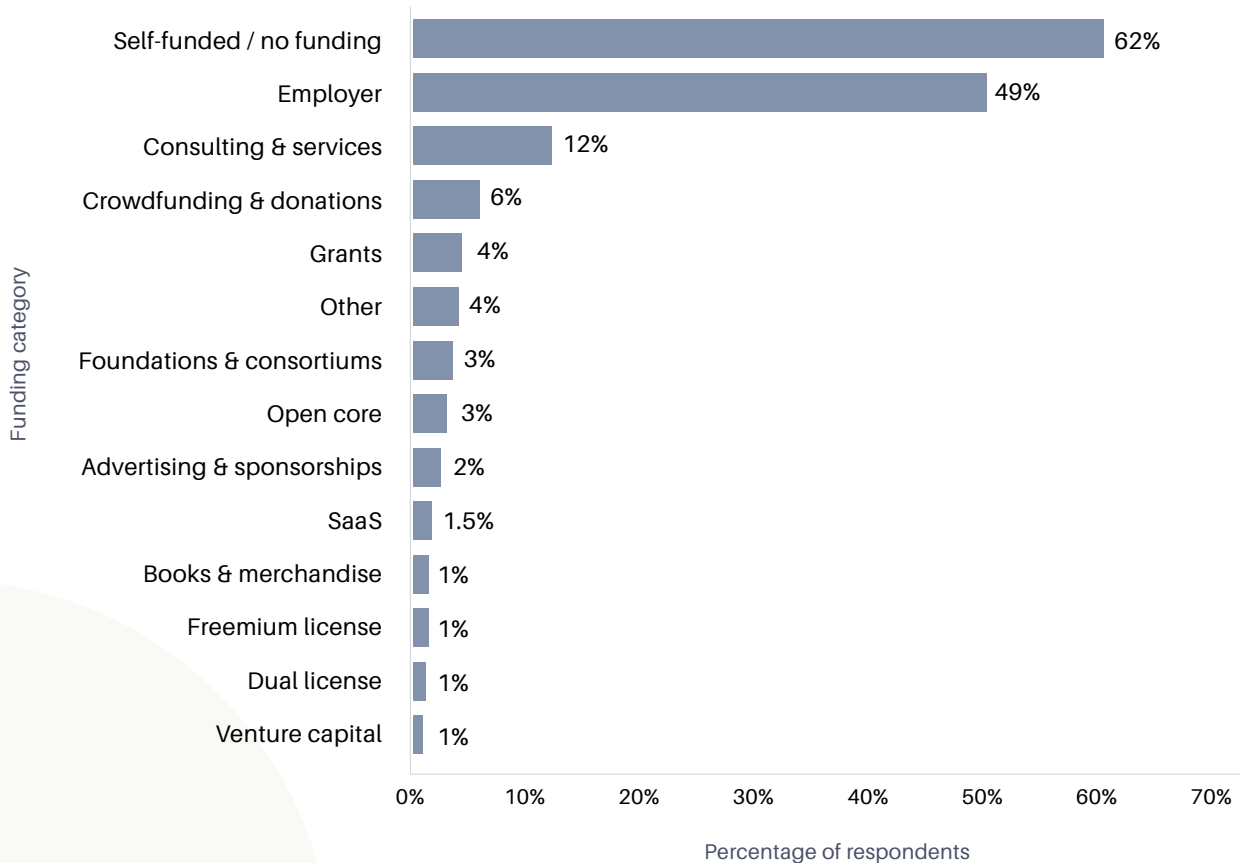
INSIGHT 5

Most maintainers are required to self-fund their open source work, or they receive no external funding

Despite the broad use of open source software, the means for funding its development remain unsatisfactory and inadequate. How do maintainers fund their work today? Here is what we found:

Over 60% of respondents said that they are required to financially support their open source work with their own funds, or that they receive no external funding at all.

How is work on open source funded today?



Though some funding models may be extremely effective for select projects, it is clear that not many of them are working at the broad scale of open source as a whole.

Our survey data shows that self-funding or no funding for work on open source is—sadly—the norm.

Of the external funding options, employer-supported open source work ranks highest, with 49% reporting receiving funding via their employer. This method has its upsides and downsides, of course.

The downside? If an employer is funding the work, it often minimizes the autonomy of the maintainer. They may only be able to work on open source with a small percentage of their time, they may not be able to choose what they work on or how much time they spend on it. And they may be doing their employer's bidding versus contributing in the way they think would create the most value or bring them the most joy.

On the upside, it is a great sign that many employers are funding open source work. This also means that employers are already paying for open source in a way.

There are many other funding avenues maintainers could consider, like offering consulting services or raising funds via crowdfunding or donations. But less than 12% of respondents say they've had success raising money in any of these ways.

Take venture capital, for example, from which just 1% of respondents have received any form of funding. Or look at crowdfunding and donations, which only 6% of surveyed maintainers have used successfully as an income source. And keep in mind: our survey asked maintainers which models they had received any money from, not the models from which they'd earned a living wage.

Though some of these funding models may be extremely effective for select projects, it is clear that not many of them are working at the broad scale of open source as a whole.

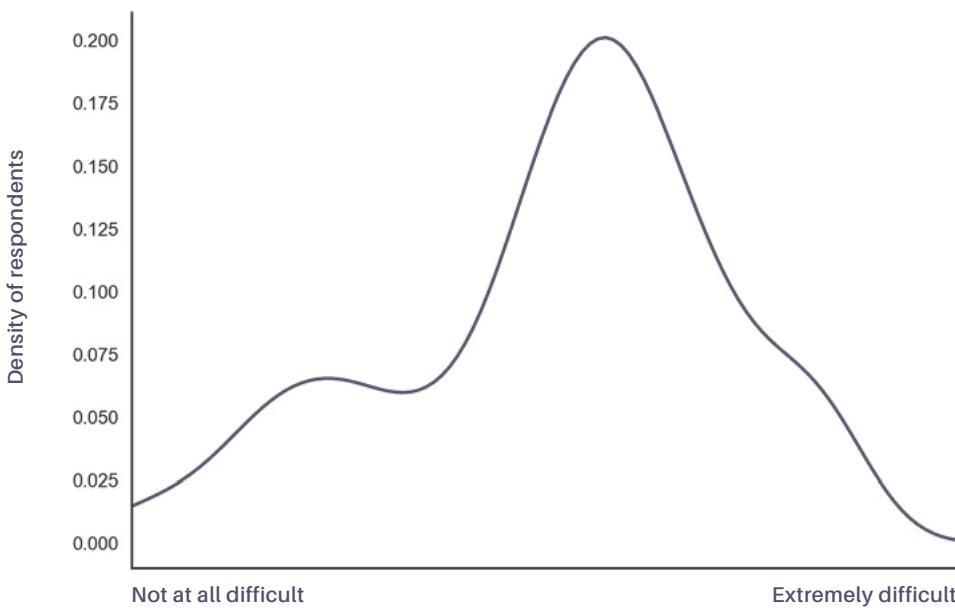
INSIGHT 6

Most maintainers have difficulty finding time to work on their open source projects

As you might suspect, our data shows that maintainers find it rather difficult to manage security issues, bug fixes, and new features for their projects:

Difficulty for maintainers to find time to work on their OSS projects

358 respondents



Despite the challenge of finding time to work on their open source projects, in the time they do have, most maintainers are self-funding their work. This is truly one of the amazing—but also sobering—aspects of open source software.

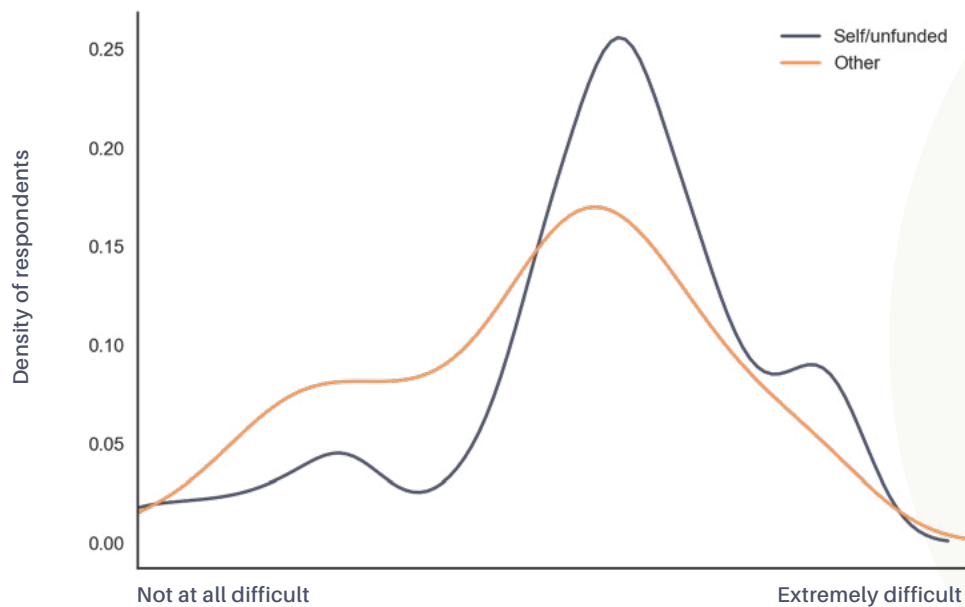
Our respondents used a scale of 1-10 to rate the difficulty of getting time to maintain their projects, and the average response was 6.2 out of 10, with over 74% of maintainers saying that they had above-average difficulty (greater than 5). On top of that, over 10% of respondents maxed out our scale, meaning they are having extreme difficulty finding time to maintain their projects.

This data also emphasizes that the relationship between open source maintainers and funding for their work is tenuous. It's apparent that maintainers are being taxed by their work maintaining open source projects.

What's interesting, however, is how responses differed for those maintainers who receive no external funding at all, as they were much more likely to feel a time crunch for open source maintenance.

Self/unfunded maintainers have more difficulty finding time to work on their projects

358 respondents



This data provides evidence that the maintainers who are either unfunded or self-funded do, in fact, find it more difficult to find time to manage security issues, bug fixes, and new features for their projects. As it turns out, maintainers who are unfunded or self-funded say that it is 14% more difficult for them to find time to maintain their open source projects. These same maintainers are also 1.7 times as likely to have extreme difficulty finding time than their alternatively funded counterparts.

INSIGHT 7

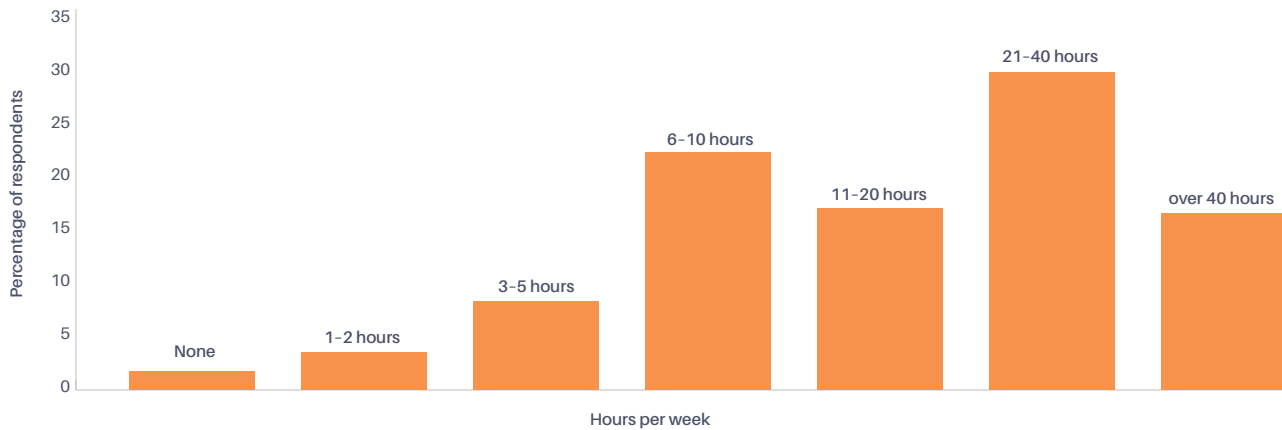
If they were well paid, open source maintainers would want to spend more time working on more projects

The first question we asked maintainers was simple: supposing you were fairly paid for your time, how many hours would you want to work each week on open source projects?

Our respondents showed a strong interest in spending significant time working on open source software. Assuming they were fairly paid, nearly 50% of respondents said they would be willing to work over 21 hours per week.

How much would contributors work per week on open source if fairly paid?

396 respondents



86% of the 396 respondents said that they would work at least an hour per day on open source if paid fairly.

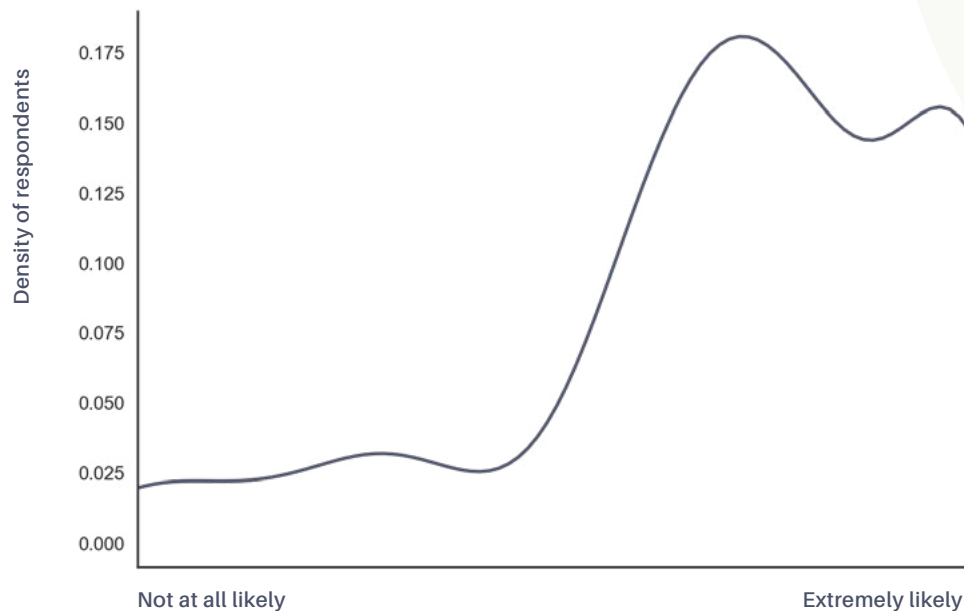
Almost every single respondent—over 98%—said that they would work on open source if fairly paid. 30% would work 21-40 hours per week, and 17% even said they'd be willing to work more than 40 hours per week. What's more, 86% of the 396 respondents said that they would work at least an hour per day on open source if paid fairly.

While this data is interesting, one could say it's to be expected that open source developers would want to spend more time working on their projects if they were well compensated. But the next data point turns out to be even more interesting.

Not only do the respondents want to spend more time working on open source, but they would also be highly likely to maintain more projects if they were paid for their time:

If you were fairly paid for your time, how likely would you be to consider maintaining additional open source projects?

358 respondents



We asked maintainers to rate, on a scale of 1 to 10, how likely they would be to consider maintaining additional open source projects if fairly paid. Their median response of 8 indicated that they would overwhelmingly be interested in working on more projects. Over 85% of respondents rated their interest greater than 5, and a surprising 25% maxed out our scale by rating their interest at 10—the highest possible score.

This is a fascinating finding, as it sheds some light on the incentives around open source: maintainers are not exclusively interested in working on their individual projects, and financial support seems to be a primary factor blocking them from doing even more open source work (if not the primary factor).

With this discovery, it would appear that there is a supply of open source maintainers who could meet the demand of professional open source users for more dependable support and maintenance around their software.

INSIGHT 8

Most professional users would pay for regular maintenance, and almost half for timely security updates

We previously saw that reliability and maintenance, security updates, and bug fixes were some of the most important factors for professional users when evaluating open source libraries. We also learned that there is a group of users who care *a lot* about managing the licensing and IP assurances around the open source projects they use.

But when it comes to opening the checkbook, what matters most to them?

- Nearly two-thirds (65%) of professional open source users also said that they'd be willing to pay for regular maintenance and bug fixes.
- Nearly 50% would pay for timely security updates.
- 40% would pay for developer support and consulting.
- 38% would pay for new feature development.

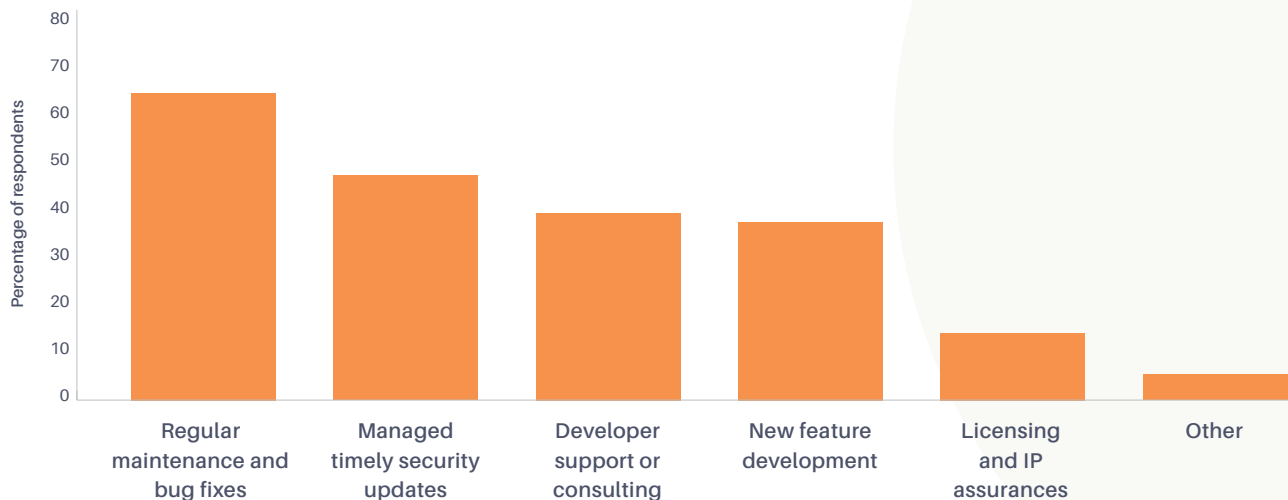
This confirms what we learned earlier, which is that professional users care a lot about the continued maintenance and the security of the open source projects they use—and now we know that they'd be willing to pay for these services too.

As it turns out, of all the possible combinations of responses, the most common was from professional users who would pay for both managed timely security updates and regular maintenance and bug fixes, further emphasizing the value professional users see in support for these activities.

Breaking the data down further, when we look at only the respondents interested in paying the most for supported open source—over \$120,000 per year—we see that maintenance, security, and licensing become even more important. In fact, 67% of these respondents said they'd be willing to pay for maintenance and bug fixes, 61% for security updates, and 36% licensing and IP assurances. These users were 3% more likely to be willing to pay for maintenance, 27% more likely to do so for security updates, and 157% more likely to do so for licensing and IP assurances.

What services would professional users be willing to pay for to make their open source more dependable?

479 respondents



One interesting note about the users who indicated that they'd pay for licensing and IP assurances: though they continue to be a small percentage (only 14%), open source licensing really matters to these respondents. In fact, 38% of respondents who said they'd be willing to pay for licensing and IP assurances for their open source software said that their organization would pay over \$12,000 per year for open source assurances, making them almost twice as likely to pay over \$12,000 per year as the average survey respondent.

All of this is to say, professional users are definitely willing to pay to ensure the software they use is more dependable, particularly around ongoing maintenance, but also including security updates, support and consulting, new feature development, and licensing and IP assurances.

INSIGHT 9

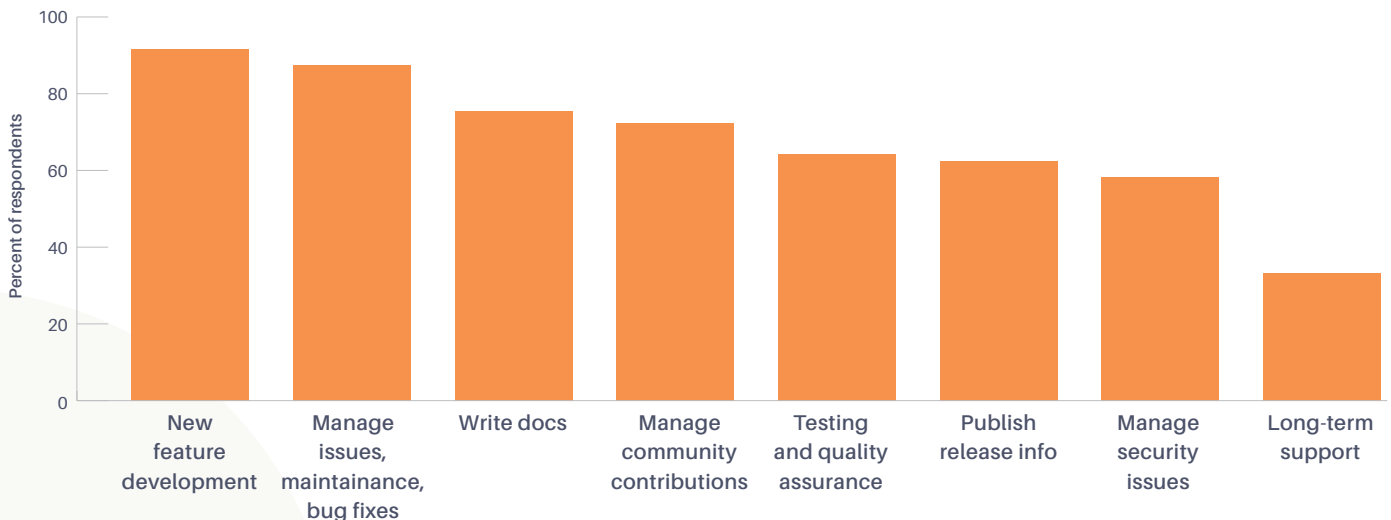
Most maintainers, if fairly paid, would provide near-comprehensive support for their projects

In our initial findings about open source maintainers, we learned that they struggle to find time to work on their projects, but that they would work on open source much more if they were fairly paid. And it turns out that they'd be willing to work on almost every aspect of their projects:

- 91% of maintainers would work on new features
- Over 87% would manage issues, maintenances, and bug fixes
- 75% would write documentation
- Almost 72% would manage community contributions
- And 58% would manage security issues and updates

What services would open source maintainers be willing to do if fairly paid for their work?

226 respondents



These results are striking, and they speak to the power that sustainable and equitable funding could bring to open source: the only service that the majority of maintainers wouldn't be willing to provide if paid is long-term support for a specific version of their project (and 33% would even be willing to provide that service).

When we compare what professional users of open source software and maintainers are looking for, we see a strong match. Maintainers are definitely interested in working on the same activities that users are willing to pay for: maintenance (managing issues, testing, and quality assurance), security (managing security issues), and licensing assurances (publishing release info).

Among other issues that professional users were most interested in—developer support and consulting, new feature development—we plainly see that over 90% of maintainers would work on new features if paid. This is great!

Providing support for professional users is cloudier, as “support” is a complicated, and potentially loaded, word. We asked professional software developers if they would value having supported open source available, and we purposefully left the meaning of that vague, knowing that many people have different definitions of what support entails. For some, support means managing issues, maintenance, bug fixes, security, and good documentation. For others, it includes things like long term or phone support with a predetermined SLA.



So when nearly 40% said they'd be willing to pay for developer support, it probably refers to some combination of these different meanings. That said, our data shows that most maintainers are willing to work on almost any aspect of their projects if they are fairly paid.

So if we were to sum it up, when it comes to most of the highly scalable support tasks—like managing issues, maintenance, bug fixes, security, and good documentation—we absolutely have a match between what professional users want and what maintainers would be willing to provide if fairly paid.

The jury is still out on more intensive support tasks like long-term support and phone/email support, and this is something we'd like to look into further in future surveys.

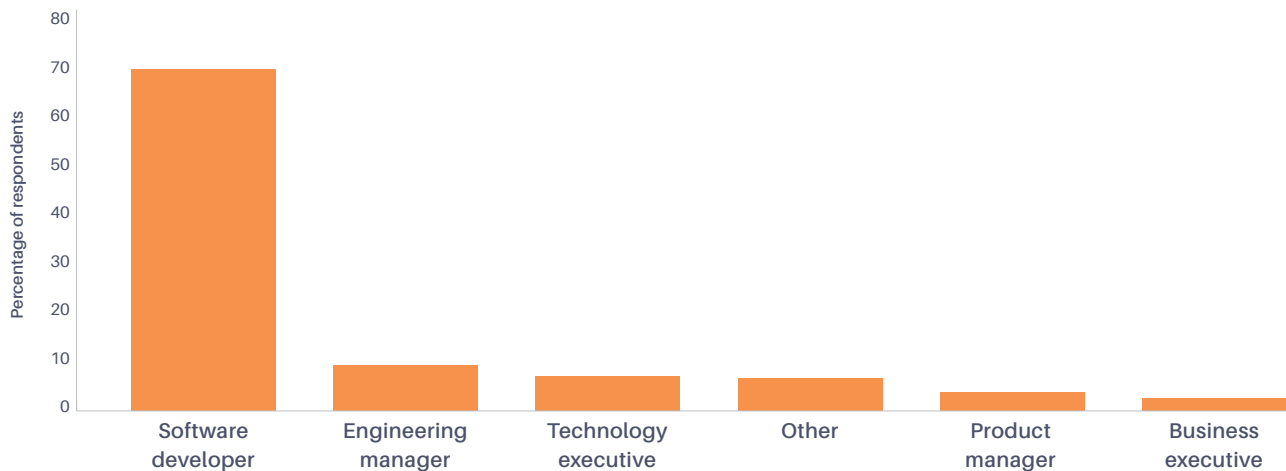
ABOUT THE SURVEY

Our survey was initially distributed to our email contact list and to our Twitter followers. From there, the majority of respondents found the survey after it was broadly shared across Twitter. We finished with 1,264 responses and asked up to 36 questions to individuals, though the questions varied if the respondent identified as an open source maintainer, a professional user, or both. The survey went public on January 29th, 2018, and was largely completed over the following week. As is to be expected, some respondents elected not to answer every question (e.g. where they live, what their job title is, etc.), but we'd like to share some data about our respondents, and the representative nature of the individuals who participated in our survey:

Almost 70% of respondents self-identified as a software developer, meaning that the survey polled the individuals most likely to be using open source software to build professional applications.

What were the roles of survey respondents?

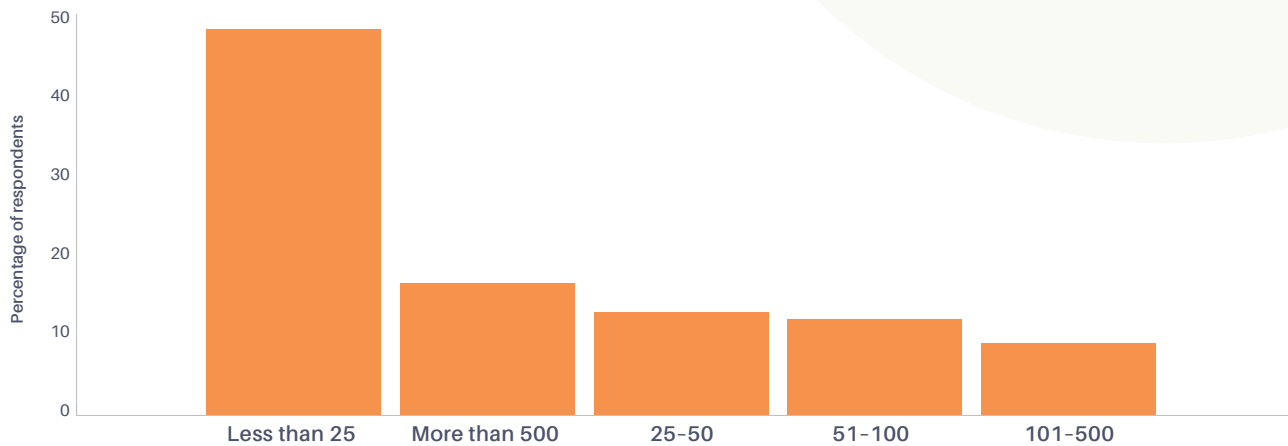
481 respondents



What kinds of companies did these professional users represent? Most often, they were companies with small development teams (less than 25 developers), though the second most common answer, with nearly 20% of responses, was large companies with over 500 people working in software development.

How many people work in software development at companies of respondents?

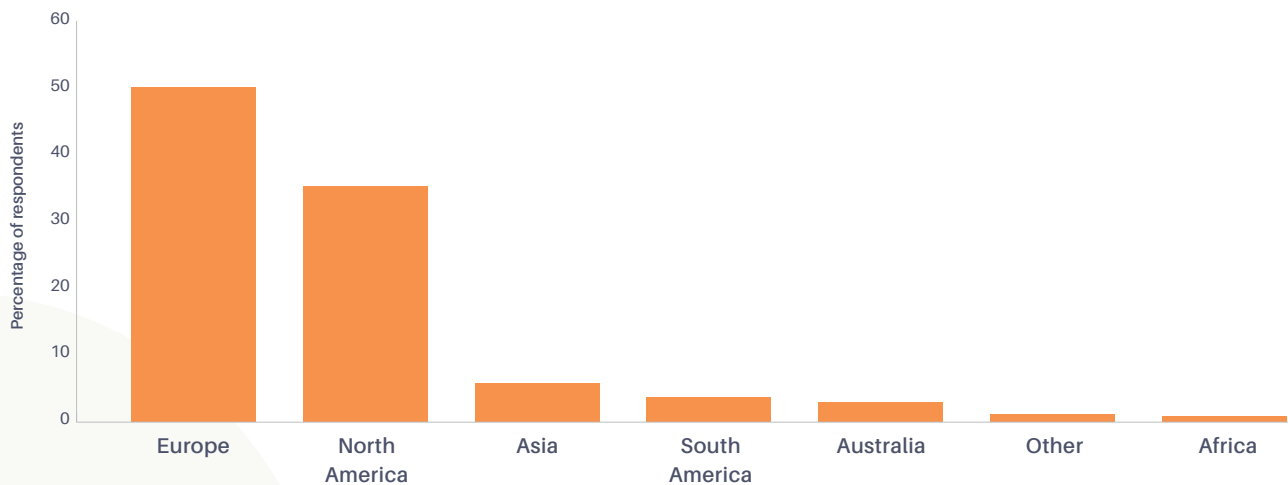
482 respondents



And where did these respondents come from? Well, all over the world! Over half live in Europe, and over one-third are in North America, but there was also representation from every other continent, helping to paint a more complete image of global open source usage.

Where do survey respondents live?

562 respondents



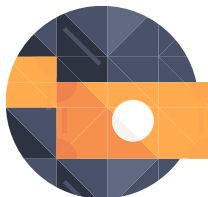
TIDELIFT

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