



Unblocking Workflows

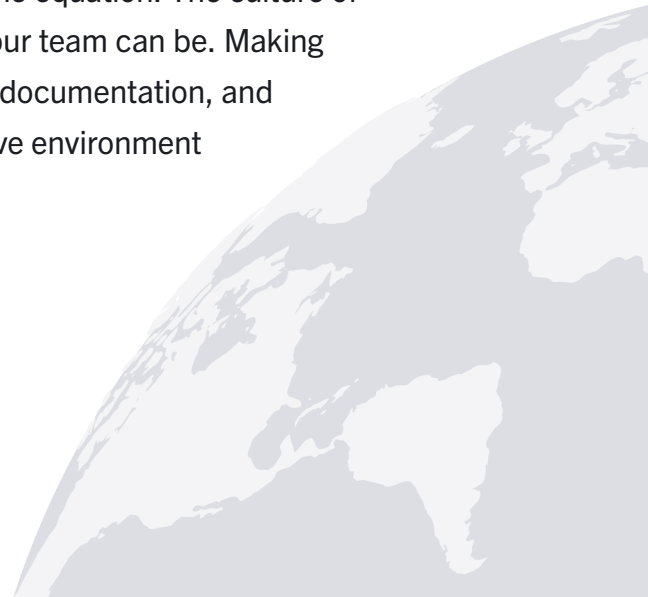
The 2023 Guide to Developer Productivity



What can you do to accelerate developer productivity in 2023?

Whether you're part of a software development company or an organization that builds applications to support your own business, software is essential to every business's success. But unfortunately, the very resources that teams rely on to get work done can hold them back. Clunky tools that don't fit technical workflows, integrations that require continuous maintenance for minimal insights, and processes that don't hold up to the fast pace of development can lead to missed deadlines, security risks, and worse.

As organizations plan for 2023 and beyond, they must recognize that developers and technical communities need tools and workspaces dedicated to the specialized work they do and the kinds of conversations that they have. Picking the right tools that will empower your team to develop, ship, and maintain software effectively is critical to the success of your business. But it's only one part of the equation. The culture of your organization can greatly impact how productive your team can be. Making an effort to move towards a more open culture, clearer documentation, and transparent communication creates a more collaborative environment that lets your team thrive.



Ready to accelerate productivity in 2023?

Empowering your team with tools and processes that remove blockers and give them the space to do their best work is the most impactful thing you can do to help your team be more productive in 2023 and beyond.

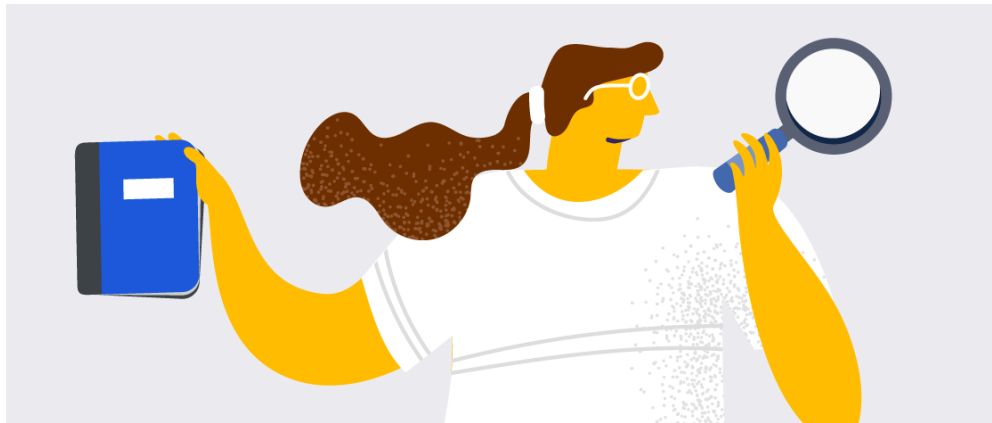
Freeing up time from repetitive tasks, tool maintenance, security concerns, and communication blockers lets your team regain focused work time and facilitates better collaboration — whether you’ve returned to office or are forging ahead as a remote workforce.

In This Guide

In this guide, we’ll explore how the software development industry has changed in the past year, and the trends and challenges we think will shape the ways development teams collaborate moving forward. We’ll also share insights from industry experts on what your team can do to improve productivity and unblock better, more collaborative workflows in 2023.

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What do we mean by “developer productivity”?

Before we go further, let’s recognize that the term developer productivity comes with some baggage. Some people feel that it’s used as a way to wring every last bit of work out of a team, single out underperformers, or find a way to shoehorn all of the work developers do into a single, achievable output.

Productivity is a complex concept, and it doesn’t easily boil down to a single, concise metric. That hasn’t stopped organizations from trying, but those efforts often leave teams with one-dimensional metrics — lines of code written, features shipped, bugs squashed — that don’t adequately reflect the work that development teams are doing. Other metrics like employee Net Promoter Score, product uptime, and customer retention paint a fuller picture of productivity but can vary wildly from team to team.

Because metrics can be so varied, we’ve decided not to focus on specific ones in this guide. Instead, we’ll be looking at the practices and processes that often feed into those numbers and build the foundation of the real goal behind measuring developer productivity: **Keeping your development team engaged, innovative, and building great products that they’re proud of.**

PART 1

What productivity challenges will keep teams from reaching their full potential in 2023?

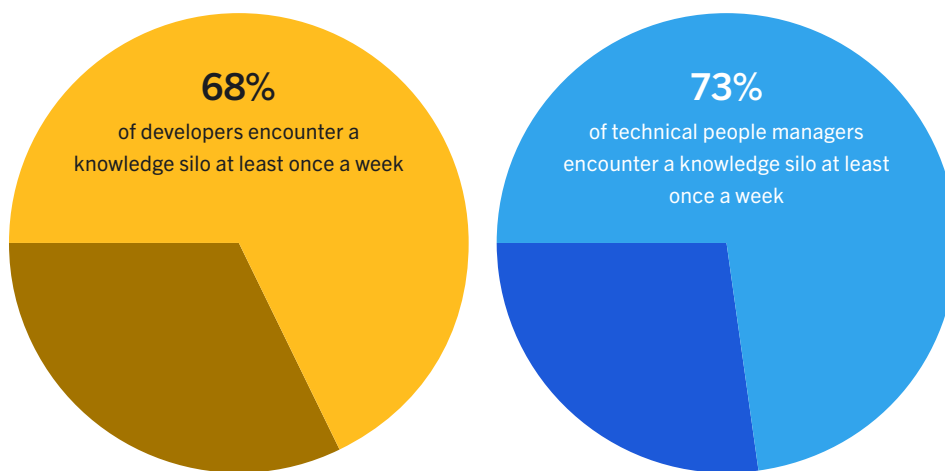


Wondering what 2023 holds for technical teams? We dug deep into what analysts, experts, and practitioners say are the trends that will challenge developer teams in the coming year — and what can be done to tackle these issues head-on.

Information silos keep developers from collaborating effectively

Development teams use multiple tools to develop, ship, and maintain software, and those tools create silos that are challenging to keep in sync. Information is being created all the time, across many different tools, and it's slowing teams down.

One of the biggest challenges keeping teams from reaching their full potential in 2022 was information silos. According to [StackOverflow's annual Developer Survey](#), 68% of developers encounter a knowledge silo **at least once a week**. The information flow is even more challenging for technical people managers; 73% report encountering a knowledge silo at least once a week.



Many of the tools that teams use to collaborate weren't designed with the way we work in mind. According to StackOverflow, 85% of developers say their organizations are at least partially remote, and even teams that have gone back to the office now need their systems to be set up for occasional or emergency work-from-home.

While the information teams need to achieve their goals probably exists somewhere in your system, that information may not be easily discoverable. After all, collaboration tools designed to supplement face-to-face interactions don't always provide a complete picture of your business, processes, and workflows.



Learn more about remote collaboration

Is navigating the challenges of a remote or hybrid workforce on your to-do list this year? Check out [Mastering Remote Collaboration](#) for insights and advice on how your team can adapt their workflows for more productive remote work.

Cybersecurity strategy is a non-negotiable part of every business

Unsurprisingly, security continues to play a critical role for software companies. In 2022, organizations made significant investments in the cybersecurity space, both in the private and public sectors. The Biden administration [brought together a task force](#) to discuss improving the security of open source software that underlies so many of the systems we use every day. Tech giants — including Google, Amazon, and Ericsson — [have pledged over \\$30 million](#) in initial funding for open source security initiatives.

[Gartner predicts](#) that by 2024, organizations will have adopted new technologies and methodologies to reduce the impact of cybersecurity incidents, including cybersecurity mesh architecture and Zero Trust security frameworks. As these security initiatives become more mainstream, organizations will be more likely to require them as part of their evaluation of software solutions. Organizations that want to stay compet-

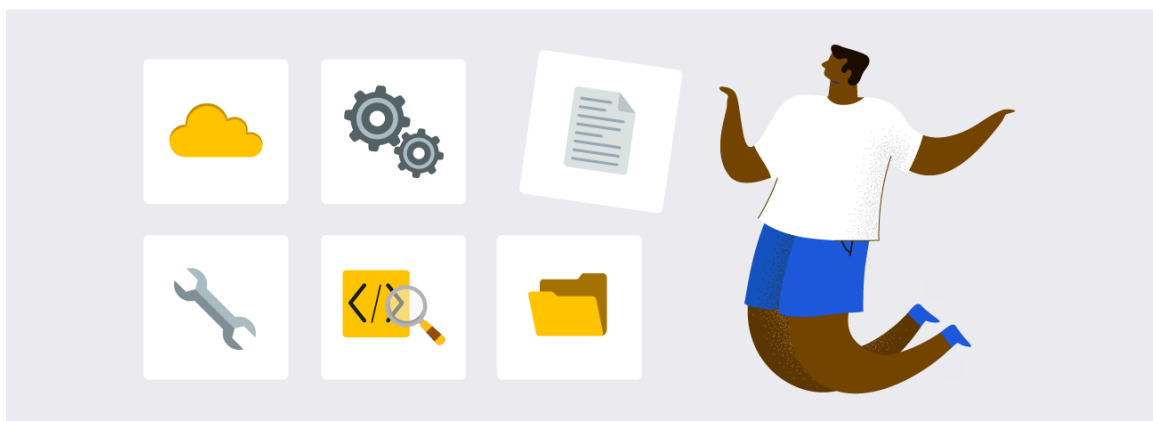
itive in a security-minded market will need to invest in their own security strategy in 2023.

Worried about loading up your team with additional work as you beef up your security practices? Don't be. Security is an area [particularly suited to automation](#); relatively small investments can yield significant returns.

Complex, fast DevOps workflows have reached a breaking point

DevOps workflows are more complex than ever. A [2020 survey from Atlassian](#), for example, found that teams practicing DevOps use an average of 10.3 toolchains to build, ship, and maintain software. But as Mattermost VP of Engineering Chris Overton [wrote in June 2022](#), the TechOps that support fast-moving teams can be messy and unreliable.

Deploying fast doesn't work when systems are constantly breaking, and teams are increasingly frustrated by complicated tool stacks that can't be relied on. A DevOps stack that requires constant maintenance can have a negative impact on your team's ability to ship software without fighting against the tide of their tools.



Moving forward, we can expect to see teams that want to optimize productivity making technology choices to simplify and streamline their tool stacks. In fact, Gartner predicts that 40% of companies will standardize on a single DevOps platform by 2023; the research firm currently refers to such a tool as a [DevOps value stream delivery platform](#). In order to improve developer productivity in 2023, software organizations must focus on improving the reliability of their stack with stronger integrations, observability tools, and more.

Platform engineering is on the rise

In connection with the challenges faced by DevOps teams, another emerging trend for software development organizations is [a move toward platform engineering](#). Infrastructure management can be a distraction for developers, who must build and maintain both internal and customer-facing software platforms. Platform engineering serves to establish a team that improves developer productivity and satisfaction by supporting the broader dev team with services and tools that help them work more effectively.

“Platform engineering emerged in response to the increasing complexity of modern software architectures,” says Paul Delory, VP Analyst at Gartner, [in an article](#) about the growth of the discipline. “Today, non-expert end users are often asked to operate an assembly of complicated arcane services.” In fact, Gartner expects that 80% of software engineering organizations will establish platform teams over the next few years.



Learn more about platform engineering

We’ve established a platform engineering practice here at Mattermost. Take a look at the challenges (and solutions!) that our platform team faces in Platform Engineer Zef Hemel’s weekly series, [The Platformer](#).

Hiring and retention challenges continue to impact productivity

At the beginning of 2022, over half of recruiters surveyed said that recruiting developers with the right skills would be the biggest challenge of the year. The demand for technical talent hasn't waned this year, and organizations that want to attract and retain developers and other technical team members should think hard about what they can offer their employees.

As we highlighted last year, the process of hiring and onboarding new talent can put a serious dent in your team's overall productivity. Organizations that want to ensure their team is set up for success in 2023 should have a plan for keeping great talent in place, as well as one for hiring and onboarding developers effectively.

And while many of the COVID restrictions that had teams making emergency shifts to remote work are now behind us, they've changed the landscape of remote work for good. According to Atlassian's State of Teams report, organizations are more likely now to offer remote work options to their teams, with [43% of teams leaning into hybrid remote/in-office models](#).



Learn more about hiring technical talent

Want to get your hiring and onboarding strategy in shape? Read [Hiring Technical Talent: Finding the Right People for Your Developer Team](#) for tips on attracting talent and creating an interview process that converts the best candidates.

PART 2

The state of developer productivity: key findings from our survey



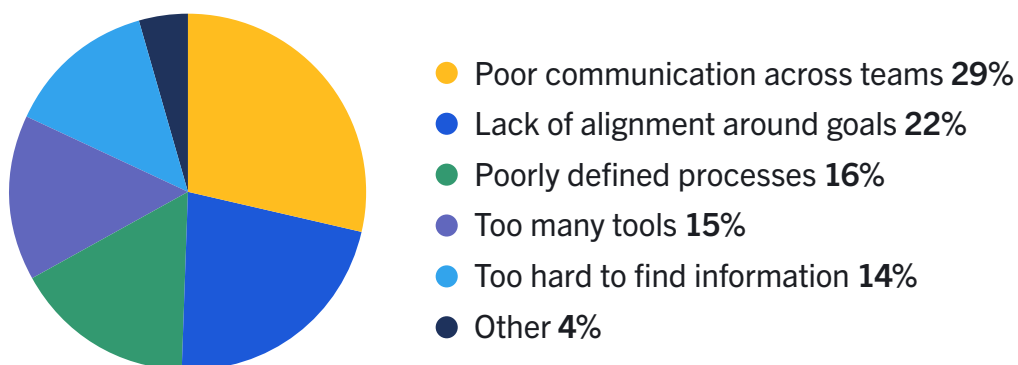
To understand how technical teams feel about the state of developer productivity this year, we asked them! We surveyed over 300 developers, technical team leads, open source maintainers, and other individuals who work with software teams about how they collaborate and work together.

What they said paints a picture of the challenges that teams face as they work together to build and maintain software in 2022. They also gave us a glimpse into the future, sharing how they're planning to improve collaboration and productivity in 2023. With that in mind, here are some of our key findings from this year's Developer Productivity Survey.

Collaboration is the most common productivity issue for developer teams

Respondents cited poor communication as the biggest productivity blocker for teams (29%), followed by a lack of alignment around goals (22%).

What is the biggest productivity challenge developers face?

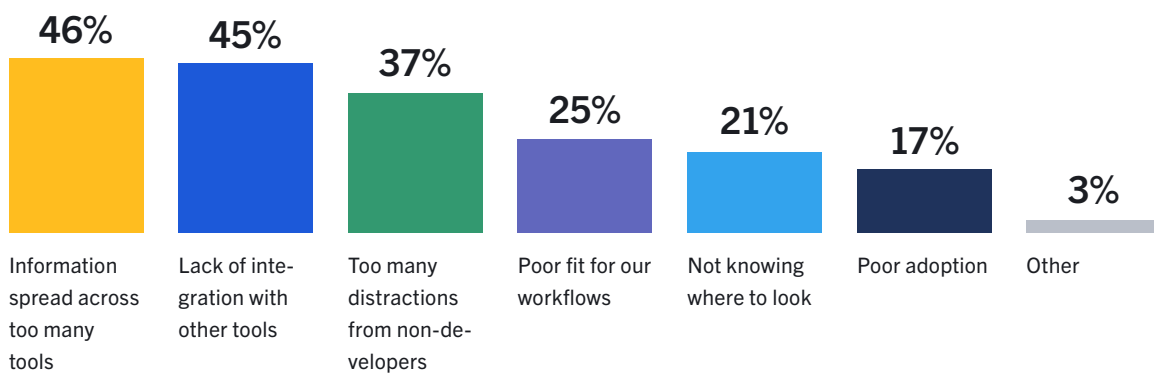


When it comes to collaboration tooling, information silos between teams are the biggest concern for developers

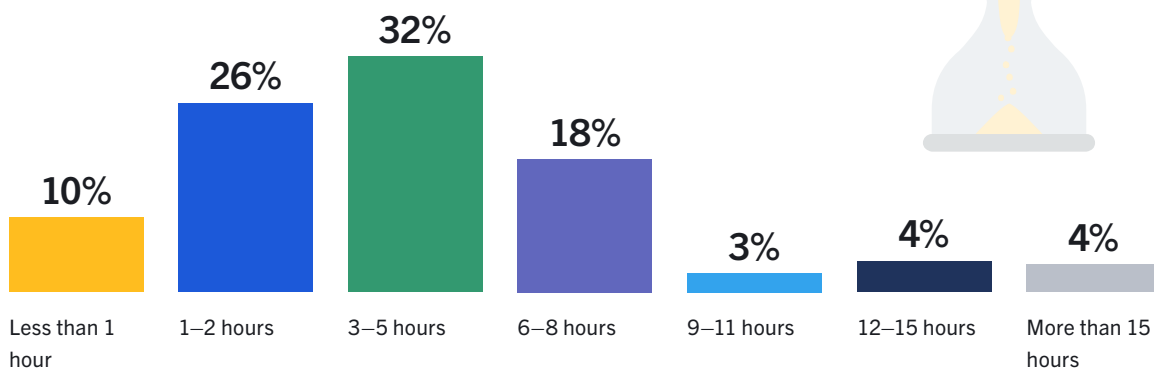
Developers cited fragmented information (46%) and a lack of integrations with other tools (45%) as major challenges. Most developers spend between 1–8 hours looking for information they need each week, with 32% in the range of 3–5 hours a week.



What are the biggest challenges you face in using collaboration tools?



Time spent looking for information every week



The collaboration tools developers use aren't always a great fit for technical teams

General-purpose collaboration tools can be great for other teams within the organization, but they often fall short for developers — or even contribute to a poor collaborative experience. In fact, 37% of respondents said that they experience “too many distractions from non-developers” on their collaboration tools while another 25% said that the collaboration tools they use don't fit their workflows well.

Better integrations are the missing link in many teams' toolchains

We asked respondents what they wished they had right now. The most common answer wasn't a particular toolchain or technology — it was better integration between tools.

What's missing from your current tool stack?



Integration with other tools so we can effectively communicate and collaborate on pressing needs.



Everything connecting seamlessly.



Stronger and more effective integration across disparate tools and platforms.



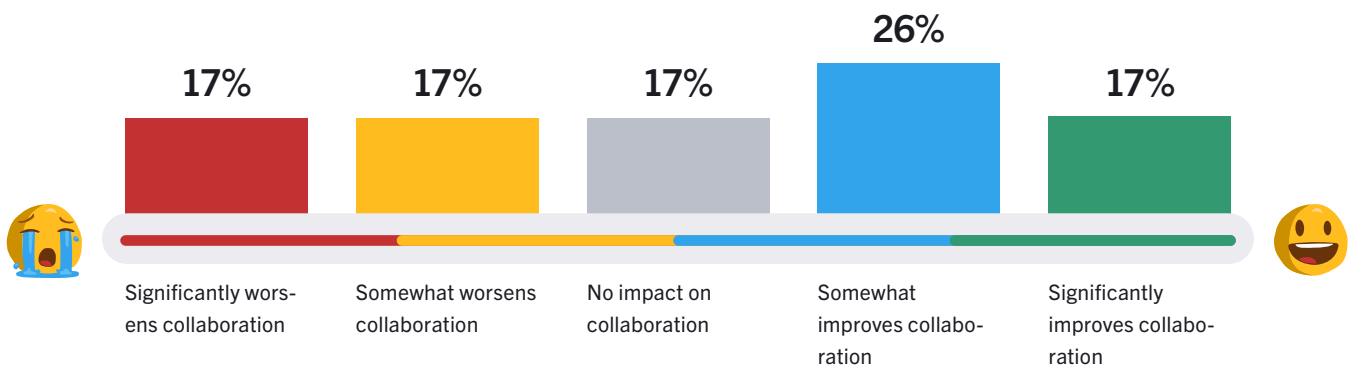
Having one central place for all information would be more efficient.



Is remote work good or bad for collaboration? The jury's still out.

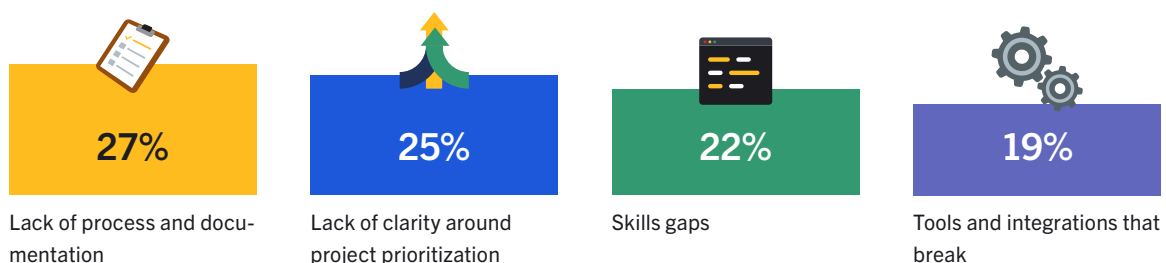
Remote work continues to be a source of tension for organizations trying to find the best work environment for their teams. Last year, over half of our survey respondents said that remote work was a net gain for collaboration and productivity. This year, however, the results are a little more mixed. While 43% of respondents said that remote work improved collaboration, another 33% said that it made collaboration worse.

How does remote work impact your team's ability to collaborate effectively?



What makes remote collaboration so frustrating for many teams? Unsurprisingly, poor communication practices are the biggest blocker to remote collaboration, with a lack of processes and project clarity each thwarting over a quarter of developer teams.

What productivity challenges have been most impacted by remote work?



For teams looking to improve developer collaboration in 2023, improving collaboration is at the heart of their plans

Teams that are experiencing issues with information sharing and communication have plans to change things up in the new year. From switching up their collaboration tool stack, investing in better documentation, or changing up their team meetings, team leads who are serious about improving developer collaboration are making essential moves to give developers more room to work together.

What is your team planning to do in 2023 to improve developer productivity?

Switch up tooling



"We are focusing on a smaller number of tools and more open source solutions."

Increase documentation

"Work on documentation and processes. We have got to get better at making our code understandable to new developers as we add them to our team."



Grow their team

"Hiring more developers with the skill set we need on our team."



Improve integration



"We are trying to develop a way to have all of our systems speak to each other."

PART 3

How highly effective teams can improve developer productivity and collaboration



Software development organizations are facing an uphill battle in maintaining and enabling teams to build great software. If you want your team to be successful in 2023, you need to give them the resources they need to collaborate effectively, which will, in turn, accelerate productivity and create the optimal environment for innovation.

Let's take a closer look at how high-performing teams approach busting through productivity blockers — and what experts say teams can do to become more productive.

Invest in systems that support your workflows rather than generic tools

Invest in open source software that can be adapted to your team's specific needs. Look for purpose-built systems that are designed with the type of workflows and work your team does in mind rather than generic tools.

In order to make the right investments, you need to fully understand what your team's needs are. What integrations would streamline their day-to-day work? Where are the biggest blockers they face during an incident or during a routine product



Learn more about building a technical team culture

Want to learn more about what your team needs and expects? Our guide to [Building a Developer-Centric Culture](#) includes tips on putting a great team culture in place — from the tools you choose to the processes you follow.

release? By getting a fuller picture of where your team needs help, you'll be able to evaluate areas where better tools, more robust processes, or other changes might make a difference.

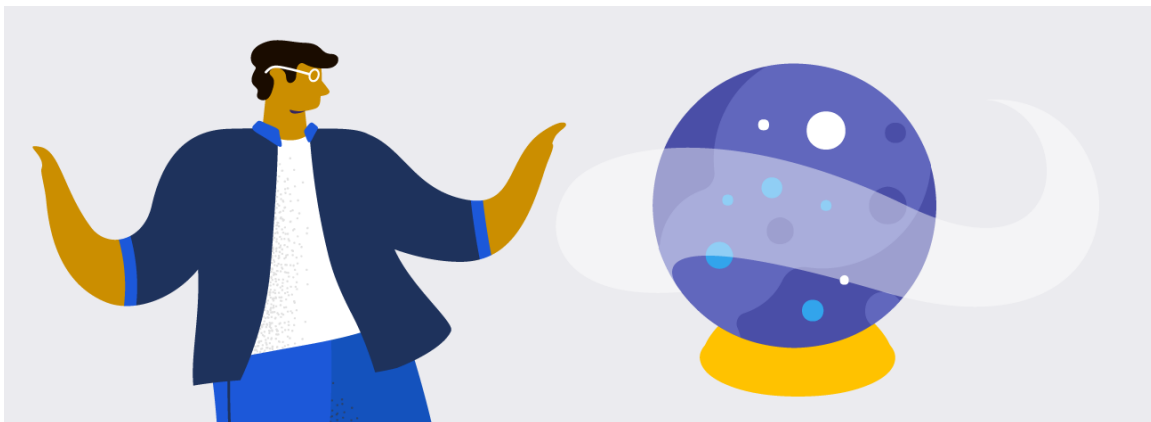
Emphasize knowledge sharing

Investing in tools that keep the information your team needs close at hand and accessible goes a long way to keeping the wheels of collaboration greased. Streamlining and consolidating that information sharing is also important. Consider designating a single source of truth for your team to use, ensuring that they don't have to hunt across multiple tools to find what they're looking for.

The right tools can unlock information silos, but knowledge sharing is also largely a cultural concern. Good process documentation practices and a culture of openness and accessibility are essential components of any software development strategy and can give your team the boost they need to collaborate effectively in 2023 and beyond.

Consider future-facing tools and platforms

The software engineering industry has experienced a few major shifts — from changes in methodology (e.g., the incorporation of security into DevOps to create “DevSec-



Ops” and the emergence of platform engineering) to the introduction of exciting new AI, IoT, and blockchain technologies that can have a big impact on your team’s workflows.

Incorporate “future-facing” platforms to help your organization grow in the coming year. AI-assistance tools like GitHub Copilot have already been shown to [help improve developer productivity](#), for example.

The catch, of course, is that adding new and innovative technologies and methodologies to your team can upset your existing workflows and integrations, slowing your team down or even breaking things. While you’re looking to the future, it’s a great time to consider whether open source tools have a place in your productivity workflow. Open source tools offer flexibility and extensibility needed to change with the times, making them a great investment for teams that want to future-proof their stack.



Learn more about open source productivity tools

Interested in getting started on the journey toward incorporating open source software into your team’s workflow? Learn why innovative teams love open source productivity tools and how you can select the right ones for your team in our guide, [How to Build Your Open Source Productivity Stack](#).

Refine automation initiatives

Automation continues to be an important part of unlocking productivity for developers, allowing your team to offload repetitive work and focus on high-value tasks. Automation also plays a key role in breaking up information silos, taking the onus of information sharing and transferring it off of your team.

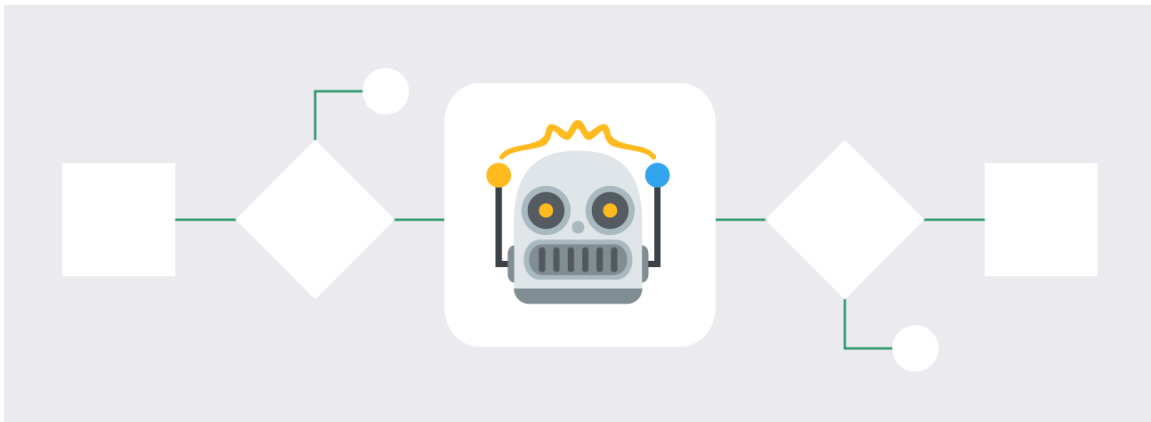
To get the most out of your automation initiatives in 2023, don’t take a more-is-more approach. Instead, focus on using automation to accelerate and streamline critical moments in your team’s workflows. For example, your security team can implement

security automations that make it obvious to development teams whether their code meets security expectations for every single PR. This makes it so developers can effectively “collaborate” with their security team without ever having to send them a message, ask a question, or search for an answer.



Learn more about strategic automation

ChatOps is a great way to start putting automation into action for your team. Check out [7 Steps to ChatOps for Enterprise Teams](#) to learn how your organization can start implementing both simple and complex workflow automation from within your collaboration tools.



PART 4 **Final thoughts**

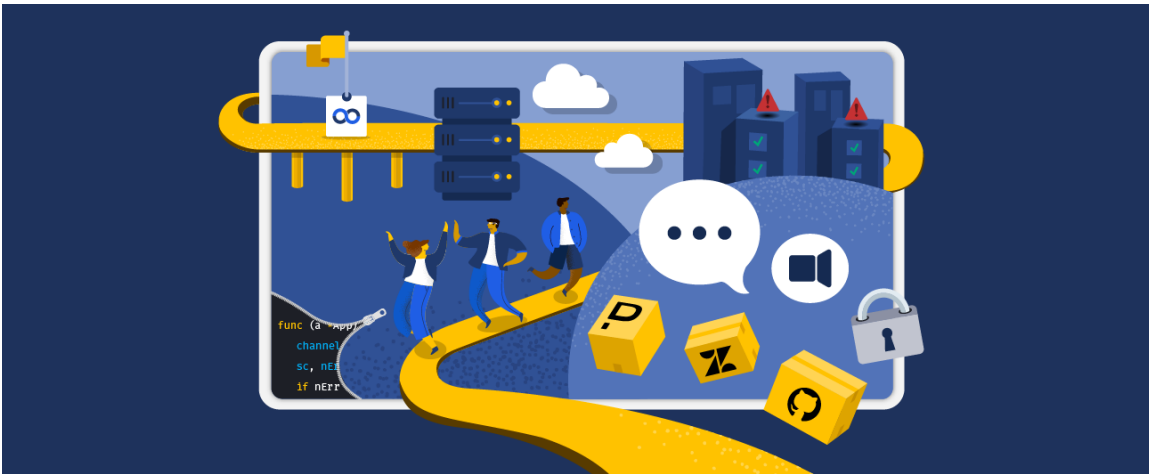


To accelerate productivity, focus on improving collaboration

At their core, developer productivity challenges are collaboration challenges. While it's easy to think of developers as individual problem-solvers toiling away on individual tasks, they do their best work when they're plugged into the network of people, tools, and processes.

Developers want and need focused work time, but they also need to collaborate regularly to continue progress. Making collaborating as easy and seamless as possible enables them to communicate and work together effectively — which allows them to get back to coding faster.

It takes more than just putting everyone in the same chat channels. You need tools that respond to the unique problems developers face and enable them — not distract them. By doing this alongside information automation (bye-bye, silos!), you can bring your team to the next level of collaboration next year — putting you in a prime position to thrive in 2023 and beyond.



About Mattermost

Mattermost is an open source platform for secure collaboration across the entire software development lifecycle. Hundreds of thousands of developers around the globe trust Mattermost to increase their productivity by bringing together team communication, task and project management, and workflow orchestration into a unified platform for agile software development.

Founded in 2016, Mattermost's open source platform powers over 900,000 workspaces worldwide with the support of over 4,000 contributors from across the developer community. The company serves hundreds of enterprise customers, including European Parliament, NASA, Nasdaq, Samsung, SAP, United States Air Force, and Wealthfront, and is backed by world-class investors including Battery Ventures, Redpoint, S28 Capital, and YC Continuity.

To learn more, visit www.mattermost.com.



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