

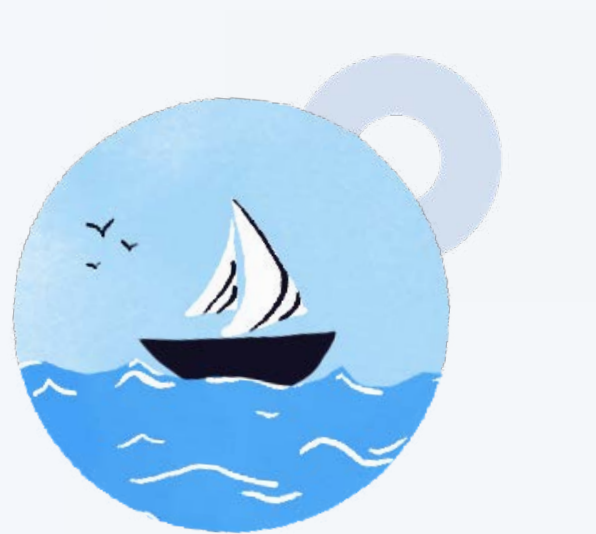
2023 report

State of Upskilling

Navigating economic uncertainty



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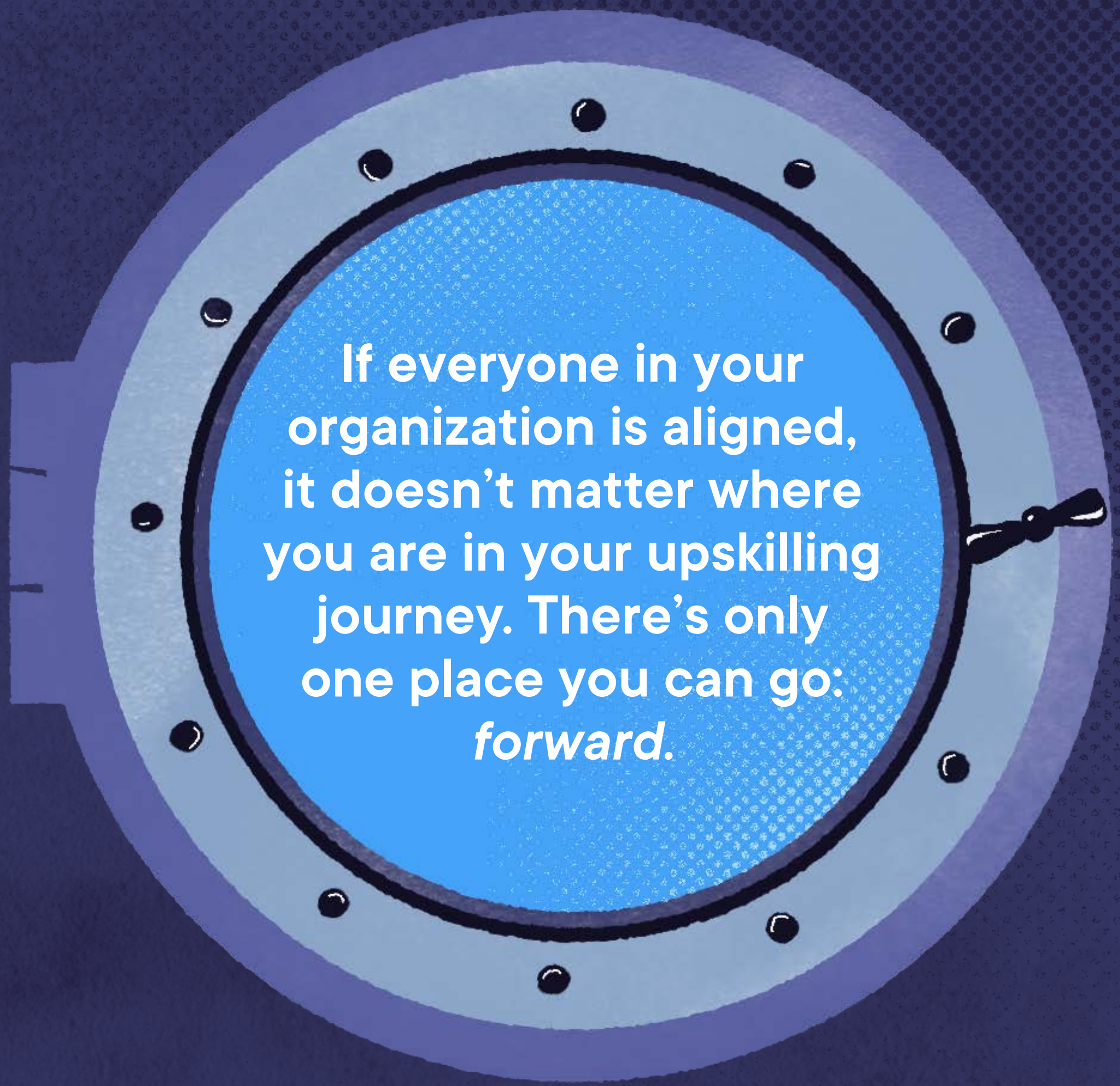
Where we are

In the past year, rising inflation, talent scarcity, and growing skills gaps have affected every organization. It isn't a question of *if* you've been impacted—it's *how much*.

When the economic outlook is hazy and your organization is scrutinizing every investment, it can be easy to leave upskilling behind. But in the midst of uncertainty, investing in your current talent is more important than ever.

Upskilling allows you to offset labor costs by filling critical skills gaps and becoming a creator, not just a consumer, of talent. **But that's only if you invest in the right resources at the right time with the right metrics to evaluate ROI.**

Once you determine the perspectives of *your* technologists, tech leaders, and HR/L&D directors (and how they may or may not be aligned), you can start implementing effective tech skill development solutions that address their needs, map to business outcomes, and help your organization successfully navigate economic uncertainty.



If everyone in your organization is aligned, it doesn't matter where you are in your upskilling journey. There's only one place you can go: *forward.*

Executive summary

We blind surveyed more than 1,200 technologists, tech leaders, and HR and L&D directors across industries and around the world to understand the current state of upskilling and the skills gaps, barriers, and challenges they face in today's macroeconomic environment.

This report provides insights that shine a light on how you can optimize learning investments, maximize existing talent, and emerge from economic uncertainty with a competitive edge.

Takeaways

In response to an uncertain economy . . .

65% of tech team executives have been asked to look for cost efficiencies.

72% still plan to increase their investment in tech skill development in 2023.

▶ Upskilling current talent is more cost-effective than hiring new employees.



The main barriers to upskilling haven't changed since 2021: lack of time and budget constraints.

▶ Organizations need to rethink the way they upskill.



The top three skills remain a priority: cybersecurity, data science, and cloud.

▶ Technologists need guided learning mapped to these business outcomes.

More takeaways

97%



of HR/L&D directors prioritize internal talent over hiring for open positions.

▶ Organizations can use upskilling to fill open roles and reduce hiring costs.

59%



of technologists say using hands-on labs and sandboxes alone or with video content is the most effective at preparing them to apply new learning on the job.

But only
32%



of tech managers say their organization provides hands-on experiences.

▶ Technologists need more than video content.

87%



of HR directors are confident in their upskilling partnership with tech leaders.

But only
57%



plan tech skill development jointly.

▶ Effective upskilling requires alignment between technologists, tech leaders, and HR/L&D directors.

47%



of technologists consider leaving their job to grow their responsibilities and skill sets.

▶ Technologists are still willing to find new jobs if upskilling isn't a priority.



Navigating the waters

Part 1

Feeling the ripples of economic uncertainty

Last year, the [2022 State of Upskilling report](#) found that organizations were struggling to retain tech talent in the midst of the Great Resignation. They turned to upskilling and talent mobility opportunities as strategic tools to reduce attrition, close skills gaps, and lower talent acquisition costs.

This year, the economic landscape has shifted. In response to an uncertain economy, 65% of tech team executives (data science, IT Ops, and software engineering executives) have been asked to look for

cost efficiencies. And since upskilling current talent is generally more cost-effective than hiring new employees, **72% plan to increase their tech skill development investments in 2023.**

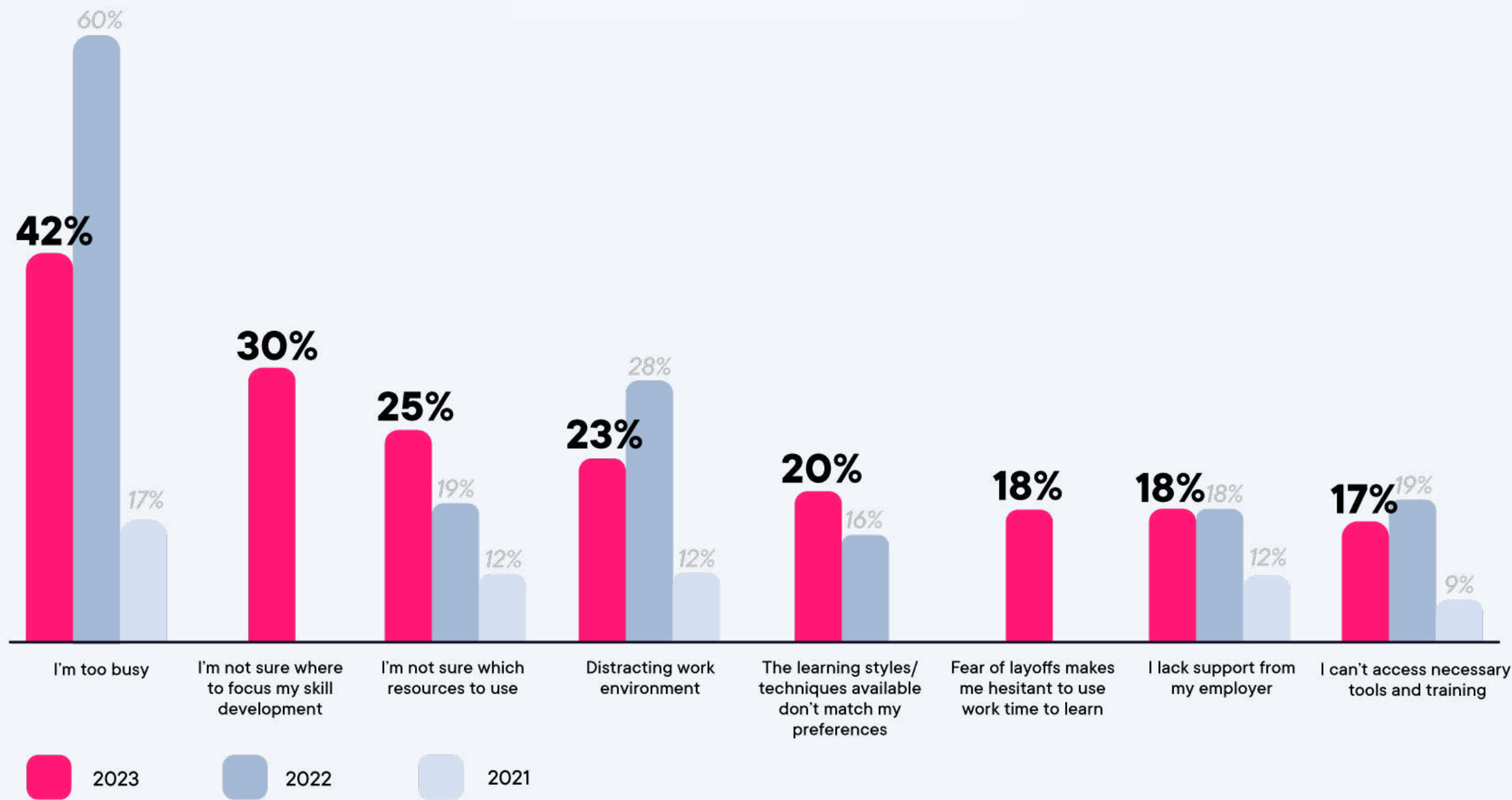
In other words, despite economic changes, upskilling is here to stay.

Tech and HR leaders know upskilling is no longer simply an employee benefit and retention tool. It's key to operational, organizational, and financial success.



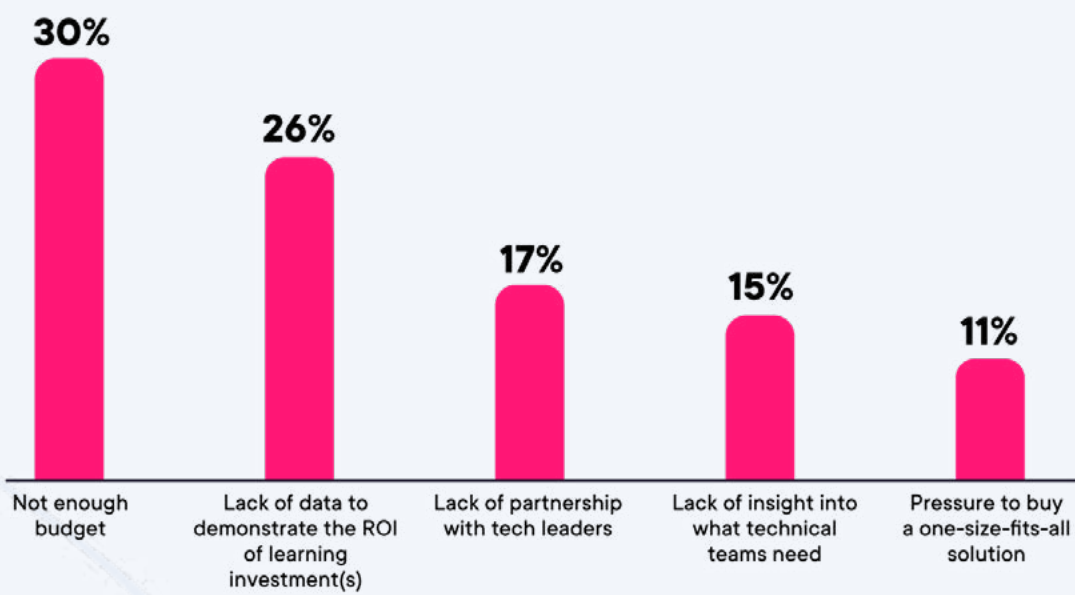
Technologists find a lack of time their biggest upskilling barrier. For tech team executives and HR/L&D directors, it's budget constraints and costs.

Technologist barriers to upskilling



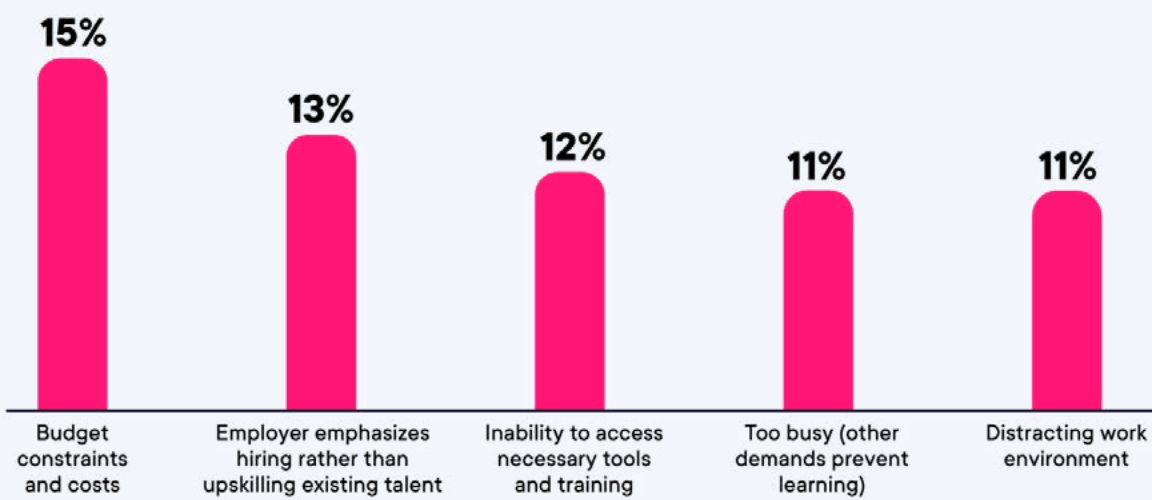
This was a multi-select question; numbers will not add up to 100%.

HR/L&D director barriers to upskilling



This was a multi-select question; numbers will not add up to 100%.

Tech team executive barriers to upskilling



This was a multi-select question; numbers will not add up to 100%.

Economic conditions exacerbate barriers to upskilling

As important as tech skill development is, various challenges obscure the route to success for technologists and leaders.

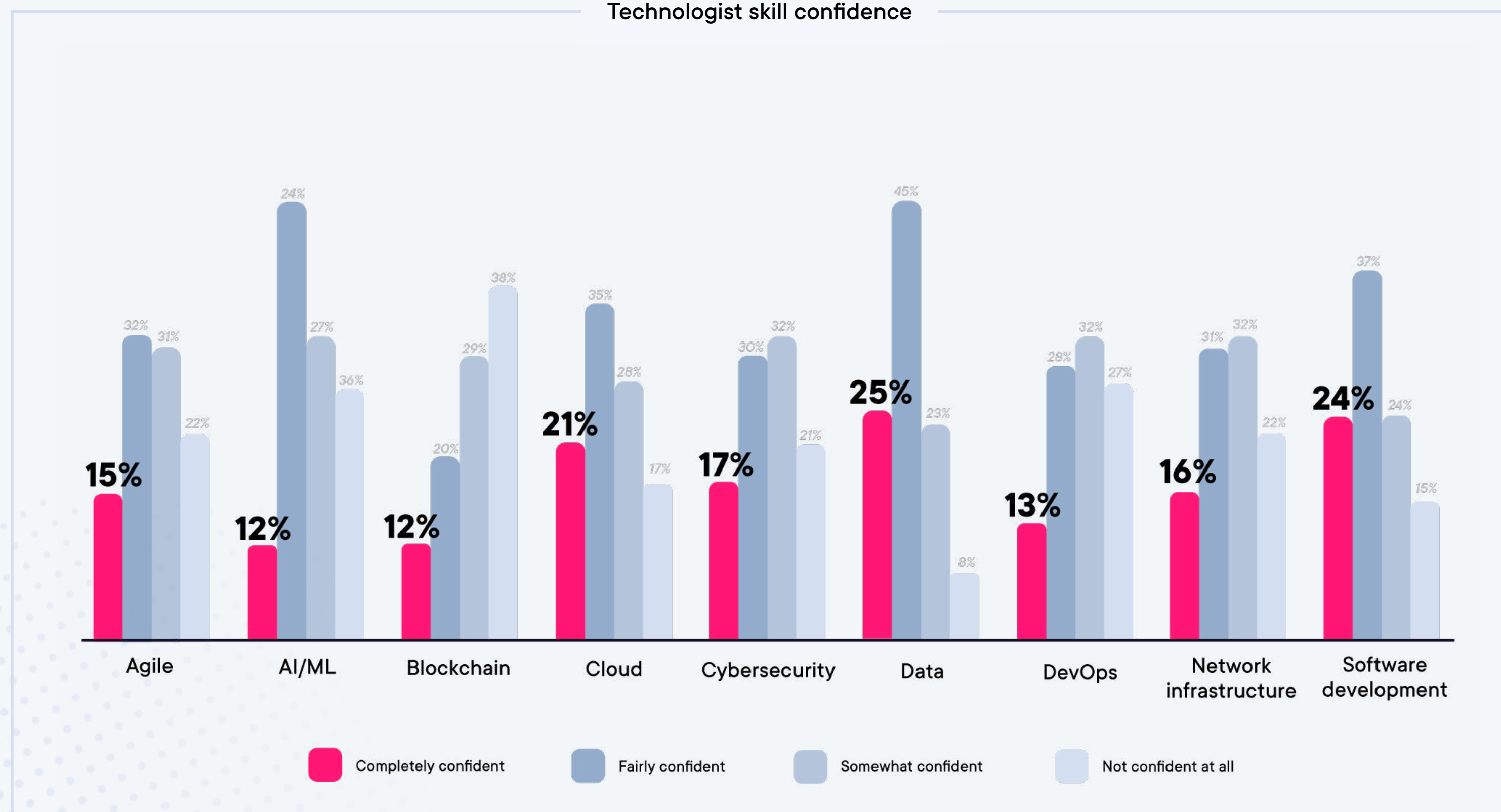
Even though 74% of technologists receive some time during the week to learn new tech skills, it's not enough. A lack of time is still their biggest barrier. For tech team executives and HR/L&D directors, the biggest barrier to upskilling is budget constraints and costs. **Lack of time and budget have remained the biggest barriers over the past two years.**

Unsurprisingly, current economic headwinds have only compounded these issues. **47% of technologists agreed a hiring pause or freeze has caused them to take on more tasks outside their job function, while 67% of tech managers said that layoffs across software, IT, and data in their organization have resulted in their teams taking on more responsibility.**



Technologists are taking on new responsibilities due to layoffs, but the vast majority don't feel completely confident in all major tech skill areas.

Technologist skill confidence



Last year, 80% of technologists said they were confident they had the skills to master their current job. This year, whether it's due to taking on unfamiliar responsibilities in response to layoffs, or other barriers that prevent them from upskilling, **the vast majority of technologists do not feel completely confident in all major tech skill areas.**

The lack of tech skill confidence and added workload can hinder technologists' desire to learn and grow. But it isn't all doom and gloom. The economic environment may have compounded existing barriers to upskilling, but it also provides an opportunity. **Organizations that continue to upskill despite uncertainty will help their remaining employees develop in-demand tech skills and discover talent mobility opportunities.**

What happens at your organization will depend on your approach to upskilling during uncertainty. If you ask employees to take on new responsibilities, you need to equip them with the time, resources, and support they need to upskill successfully. You also need to define new career paths that transform these barriers into growth and development opportunities. When you acknowledge hardships—but present solutions—your tech teams will take note.

Upskilling remains critical to retention

Last year, 48% of technologists considered leaving their job at least once a month. The same was true this year. But more surprising was the **number of technologists who plan to leave their current organization within one year: a solid 74%.**

Chief among their reasons to jump ship? Tech skill development and new opportunities. In fact, **47% of technologists consider leaving their current organization to grow their responsibilities and skill sets**, and 27% consider leaving because they're bored with their current responsibilities.

The Great Resignation may have subsided, but you'll still want to provide clear career paths, talent mobility opportunities, and upskilling options (if you don't already) to preserve your teams.

Unfortunately, even if you provide these resources, your employees may not use them. 18% of technologists said their manager doesn't give them any time during the week to learn new tech skills. As a result, 21% of technologists feel pressured to learn outside work hours. And another 20% worry that they'll experience

negative consequences if their daily productivity drops while learning.

If your organization gives technologists upskilling opportunities during the work week, make sure they also have a safe space in which they feel empowered to learn. Almost half of tech managers worry that organization-paid time to learn may have a negative impact on team velocity or productivity. With this mindset, they may discourage their teams from using paid time to learn without realizing it.

It's difficult to make time for upskilling when teams still have deadlines to meet. Upskilling during work hours *will* hinder short-term productivity, and managers often bear the brunt of this stress.

But don't sacrifice short-term productivity for long-term success. **To hold onto your top talent during an economic downturn, you need to continue to invest in upskilling—and actually encourage and enable your technologists to use it.**

Organizations can do this by cultivating a culture of learning at all levels. Talk to managers about their concerns and work with them to develop reasonable workloads and deadlines when upskilling. You'll empower them to create a psychologically safe workplace where technologists feel comfortable learning, and the skills their employees gain will accelerate success in the long run. Everyone wins.

IT managers, security engineers, and software developers experienced the highest rates of attrition according to tech managers.

Organizations continue to invest in upskilling

Upskilling impacts more than retention, though. Tech skill development gives employees the skills they need to engage with emerging technologies and advance your organization, whether that's through day-to-day operations or large-scale digital transformations.

85% of organizations are either actively engaged in, or planning to begin, a digital transformation project in 2023. For these projects to succeed, organizations need to invest in the people who will make them happen rather than rely on outside talent to fill skills gaps.

According to Gartner® research*, 37% of organizations report that upskilling and reskilling is the most significant opportunity to close talent gaps over hiring new employees (22%), consultants (13%), and outsourcing talent (14%).

That makes upskilling one of your best options for success, especially when economic conditions make it hard to hire.

*Gartner, "Foster a Culture of Agile Learning to Upskill IT Employees Faster," October 17, 2022. GARTNER is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally and is used herein with permission. All rights reserved.

81%



of tech managers said they continue to prioritize tech skill development for their teams, even in times of economic uncertainty.

52%



of technologists agreed it's important to learn new tech skills in times of economic uncertainty.

▶ 35% are currently studying for a certification.

The takeaway

Economic uncertainty has exacerbated barriers to upskilling for technologists and leaders. Despite this, most organizations recognize upskilling current talent is more cost-effective than hiring new employees and plan to increase their tech skill development investments in 2023.

As technology continues to evolve at a rapid pace, your organization needs to invest in tech skill development to retain employees, operate day to day, complete digital transformation projects, build cost-effective products, reduce cybersecurity risks, and drive other strategic business goals.

This is true regardless of the wider economic conditions. If you continue to invest in your current talent, you'll be better situated to navigate *any* environment.

Charting a course toward optimized upskilling investments

Despite the need to look for cost efficiencies in response to an uncertain economy, **only 32% of tech team executives are being directed to divest critical resources in their workforce.**

But organizations aren't always investing in the right upskilling resources or providing the right support. And when every dollar matters, it's more important

than ever to optimize your investments and ensure their ROI by focusing on four key elements: tech skills tied to business outcomes, guided learning, immersive experiences, and ROI metrics.

Develop tech skills tied to organizational goals

80% of tech managers say they partner with HR/L&D to drive their team's tech skill development plan forward. And **83% of HR/L&D directors feel confident they understand what skills their technology teams need—but only 57% plan tech skill development jointly.**

Tech leaders and HR/L&D directors need to work together to ensure upskilling maps to organizational goals. Without clear communication between teams, organizations risk wasting time and money helping technologists develop unnecessary tech skills. The opposite is also true: They could fail to provide

upskilling opportunities in areas essential to achieving business outcomes. Take cloud computing. 79% of tech team executives say their organization is engaged in a cloud migration. But only 36% of organizations provide paid time for technologists to enhance their cloud computing skills.

Even if these organizations outsource cloud transformation work, technologists are left to learn on their own time—or worse, they never develop the skills they need to migrate to the cloud or operate successfully once there.

Direct technologists to the right skills

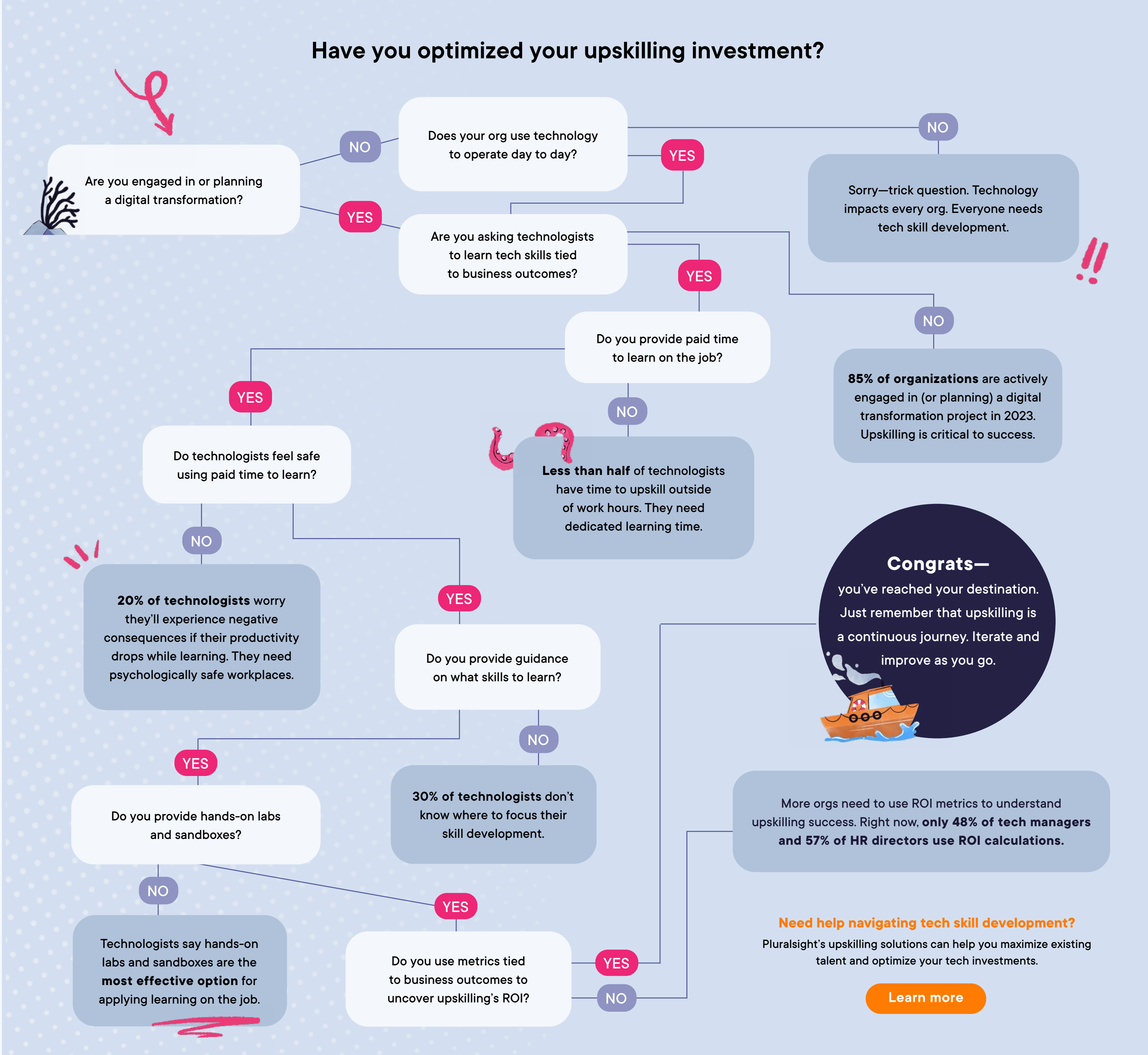
We asked technologists and their managers, “If your organization gave you paid time to learn during the work week, what three topics would you prioritize?” Though prioritization differed, both groups chose cloud, cybersecurity, and data science. These preferences often map to organizational goals, but technologists still need more direction, especially with limited learning time.

Organizations tend to rely on one-size-fits-all learning platforms and leave employees to define their paths. But when technologists face an overwhelming amount of content of varying quality, choice paralysis can set in. **30% of technologists don’t know where to focus their skill development, and 25% aren’t sure which resources to use.**

They’re not the only ones worried. 52% of tech managers believe that even with paid time to learn, their team members might not learn skills aligned with the organization’s strategy.

To make the most of your investment, your organization needs structured learning paths that direct employees to the right courses, videos, and certifications.

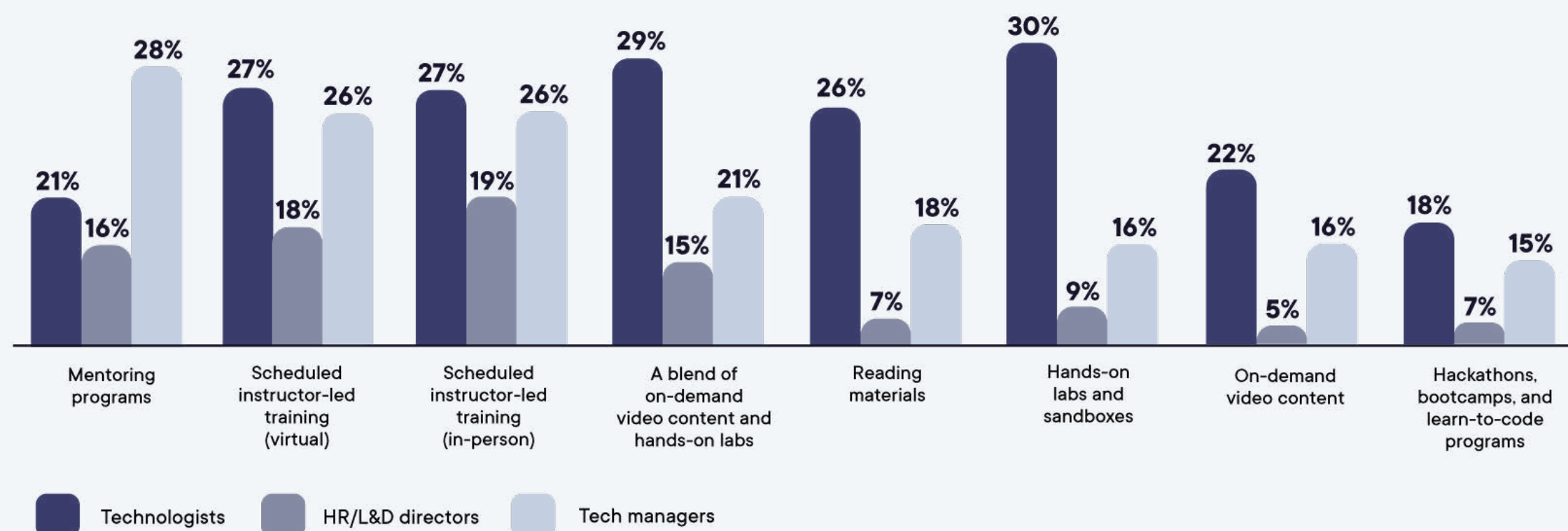
If you don’t make it clear what you want employees to learn, you risk them not learning anything at all (and waving goodbye to any potential ROI).



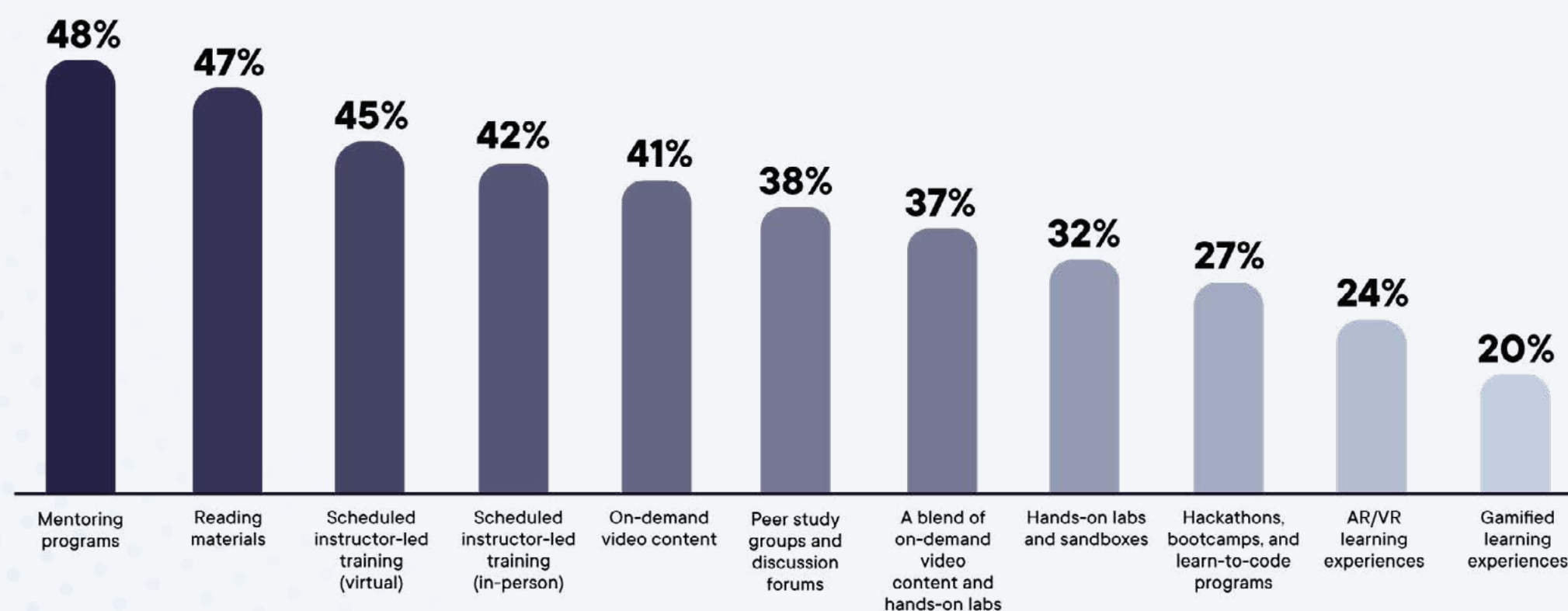


Organizations don't always provide the learning options technologists find most effective.

Most effective learning options



Learning options organizations actually provide



Provide immersive learning experiences

Only 16% of technologists completely trust YouTube videos to learn tech skills. These days, on-demand video learning is table stakes. Technologists need—and want—more trustworthy resources and immersive experiences to help them apply learning on the job.

In fact, **technologists say hands-on labs and sandboxes are the most effective option for preparing them to apply new learning.** A blend of on-demand video content and hands-on labs is their second most effective pick. **But only 16% of tech managers agree** hands-on labs and sandboxes are the most effective learning option, and less than half say their organization provides hands-on experiences alone (32%) or together with on-demand video content (37%).

This doesn't mean that hands-on opportunities are the *only* resource you should provide. Technologists and tech managers alike find other immersive learning experiences, like instructor-led training, effective in helping learners apply new skills. This is especially apparent in areas like data science, network infrastructure, and cybersecurity, where technologists find extra assistance from a live instructor valuable.

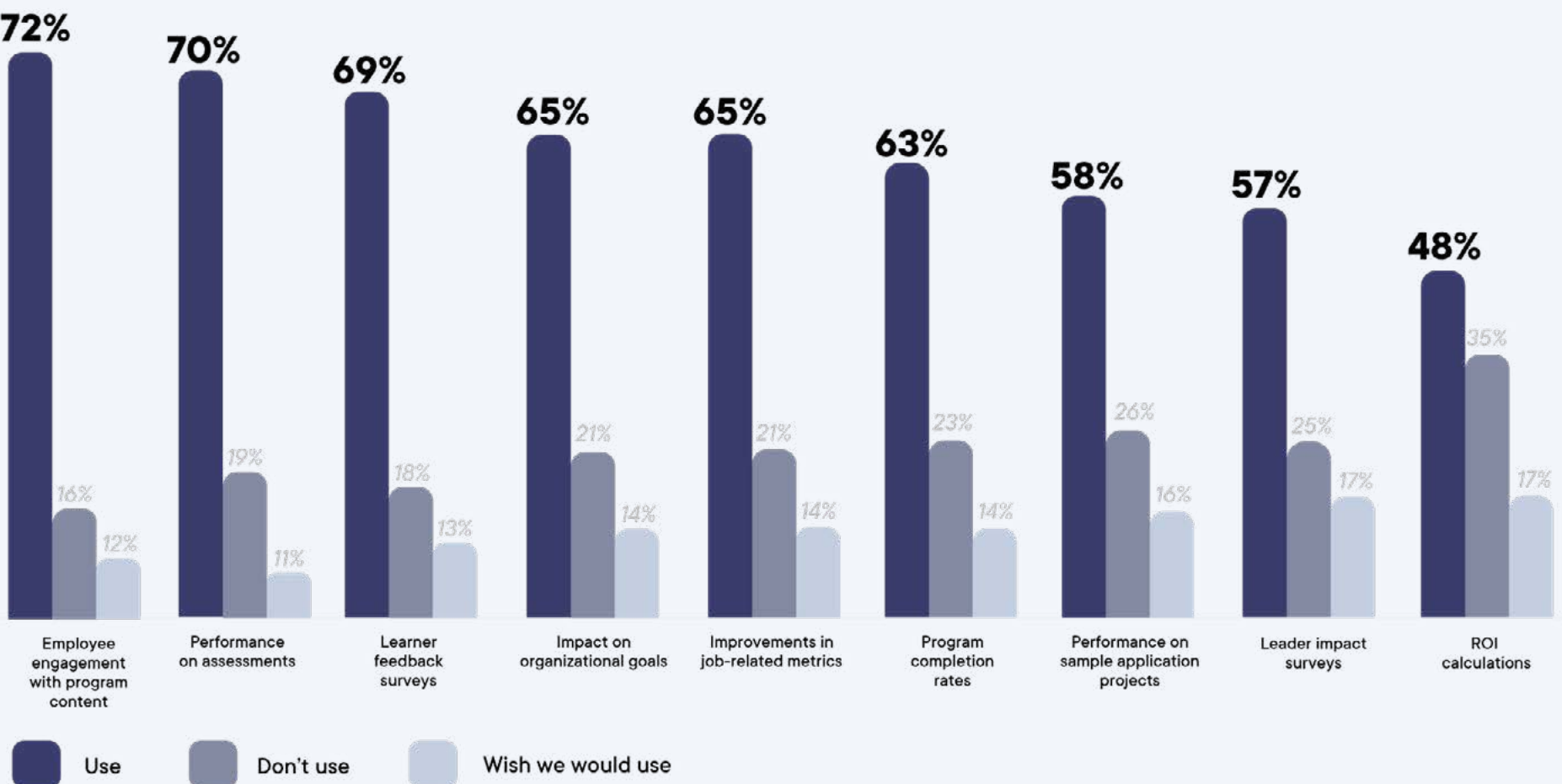
A blend of options supports different topics and learning styles, and an effective upskilling program accounts for this.

Consider the resources your technologists need to apply their newfound skills on the job. When you bring them in, you won't just increase engagement—you'll also generate *excitement*.

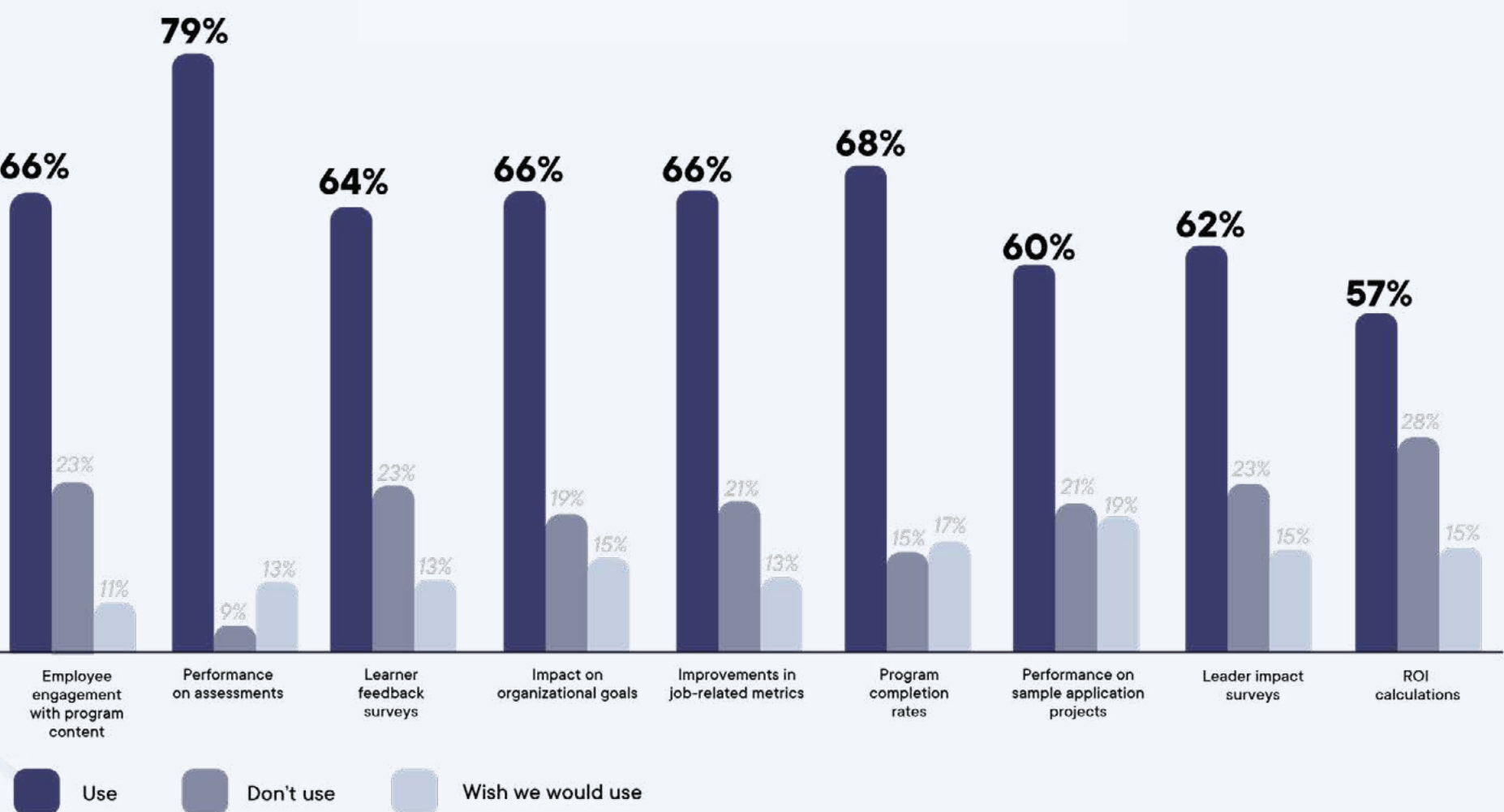


About half of tech managers and HR/L&D directors use ROI calculations to measure upskilling success. Almost a third don't even want to.

Upskilling metrics used by tech managers



Upskilling metrics used by HR/L&D directors



Measure upskilling success

Upskilling initiatives may have reduced hiring costs, accelerated delivery timelines, or streamlined a digital transformation project—but can you prove it?

To prove the business value of upskilling during economic uncertainty (or any time), you need metrics to track program performance and identify areas of success and opportunity. We found that 72% of tech managers use employee engagement with learning content as a way to measure the success and effectiveness of their upskilling programs, while 68% of HR directors use program completion rates.

These findings indicate that teams are taking the time to upskill (a definite positive). However, engagement and completion are only one piece of the bigger picture.

Technologists may engage with content or complete a learning path, but that doesn't automatically mean they've retained the information or can apply new tech skills on the job. **If you want to measure the true value of upskilling, you need to assess how skills improve over time and contribute to organizational goals and ROI.**

Many organizations have taken steps in the right direction: 70% of tech managers and 79% of HR directors already use skill assessments to measure upskilling success. And 40% of HR directors agree that a successful tech skill development program should include an analysis to determine current skills gaps and skills levels.

However, only 48% of tech managers use ROI calculations as a way to measure upskilling success, and 35% don't use them and don't want to. It's a similar story for HR directors. Only 57% use ROI calculations to measure the effectiveness of upskilling, and 28% don't use these calculations and have no desire to.

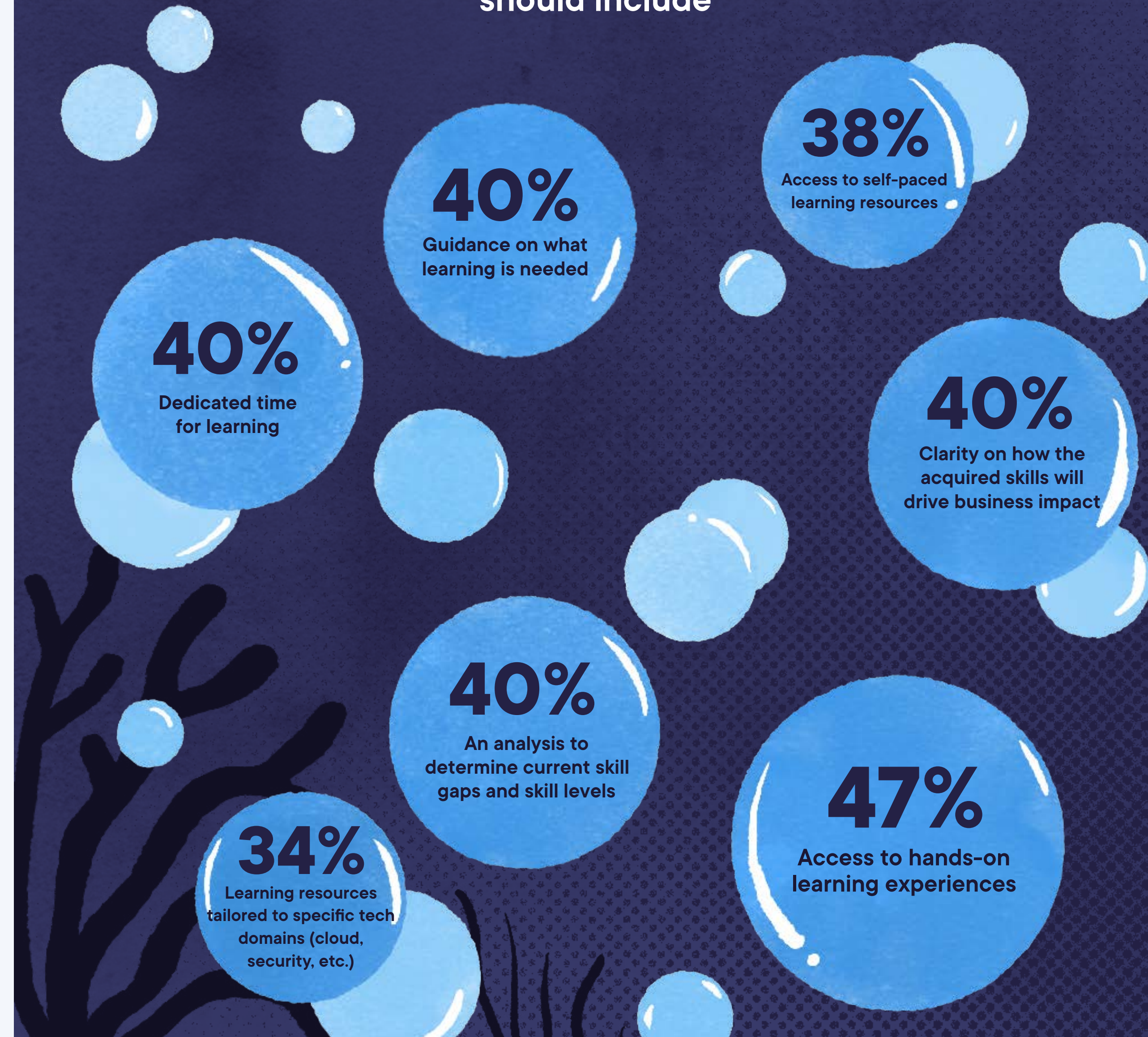
It can be easy to turn to wins like an entire team completing a course, earning a certification, or passing a skill assessment. And these are wins. But the impact of upskilling can extend far beyond your tech teams. If you track skill development metrics tied to outcomes and ROI, you'll broaden your upskilling horizons.

The takeaway

While organizations continue to invest in tech skill development, it's important they optimize their spend for smoother sailing, especially in the midst of economic uncertainty. To do this, they need to facilitate strong partnerships between tech leaders and HR/L&D directors, map tech skills to goals, guide technologists in the right direction, and provide immersive learning experiences. Last, but certainly not least, they need to measure upskilling's impact on outcomes to determine ROI.

Otherwise, they risk wasting limited time and money on upskilling initiatives that fail to provide quantifiable results. And in this economy? That's a risk no one wants.

What HR directors say a successful skill development program should include





Anchoring to success

Part 3

Lifting the fog on upskilling's (true) ROI

Let's say your organization has optimized its upskilling investment. You've mapped tech skill development to outcomes, guided technologists in the right direction, provided immersive learning experiences, and used metrics to track success.

You can take it one step further and use these metrics to uncover upskilling's true ROI. Whether you're looking to reduce hiring costs, minimize cybersecurity risks, or something else entirely, you can leverage upskilling to achieve your goals and ride that wave across your entire organization.

As they continued to scale their software and expand their cloud offerings, Sage, like other software organizations, faced increasingly varied security threats. Rather than rely on a siloed security team, leaders at Sage landed on an ambitious goal: to build a culture of trust in which every colleague, particularly those in engineering teams, feels empowered and confident when it comes to security.



[Read the case study](#)

Why pursue upskilling and talent mobility?

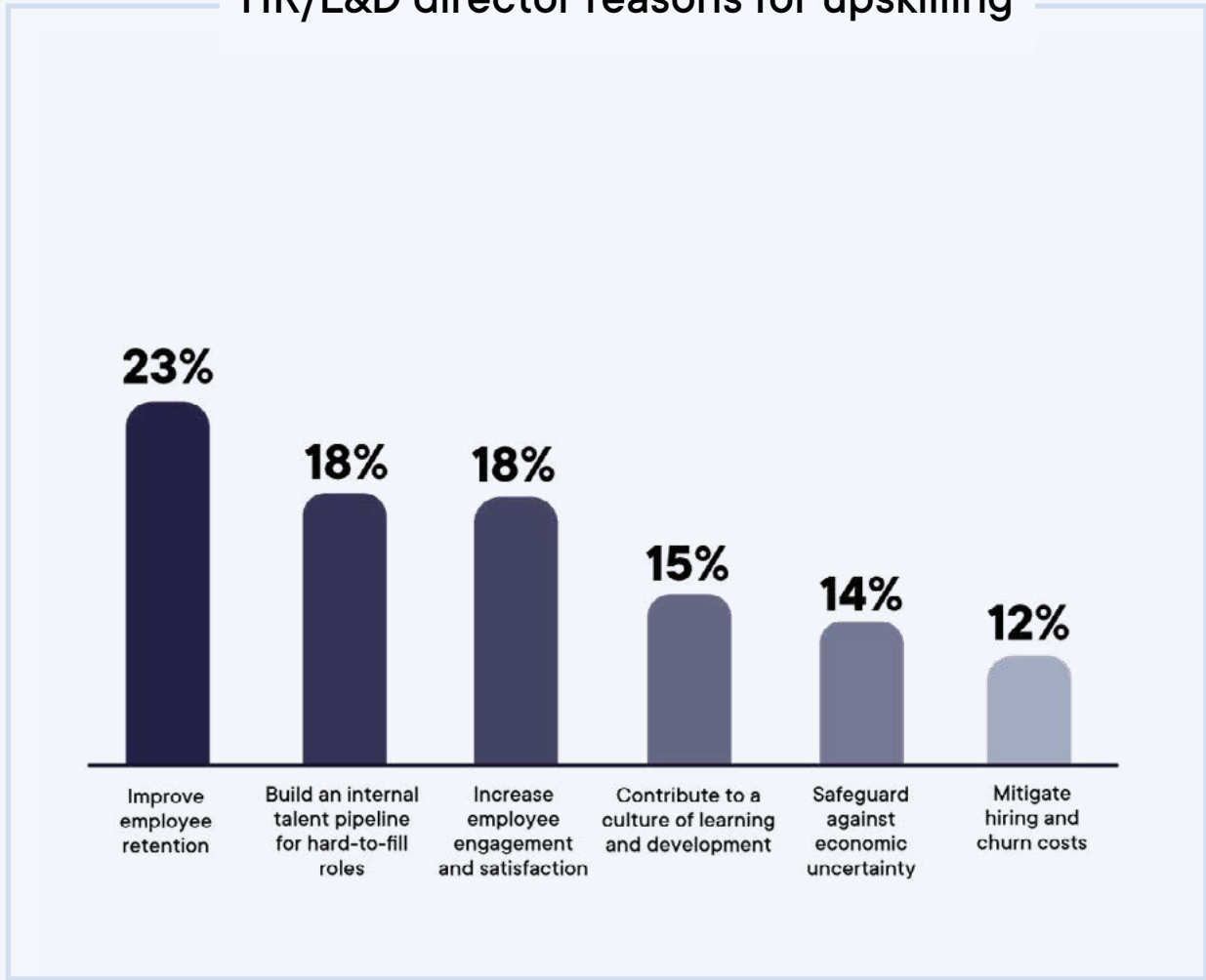
For technologists, upskilling means the potential to increase their salary, expand their skill set for personal development, and strengthen their job security. For HR directors, it's the potential to improve employee retention, build an internal talent pipeline for hard-to-fill roles, and increase employee satisfaction. And tech leaders get the teams they need to deliver on their organization's initiatives faster and with higher quality.

If you can hone in on each group's motivations, you can leverage upskilling and talent mobility as strategic tools to improve employee satisfaction and meet business goals. Upskilling even gives you the power to reduce costs in an iffy economy, not just keep your organization afloat.

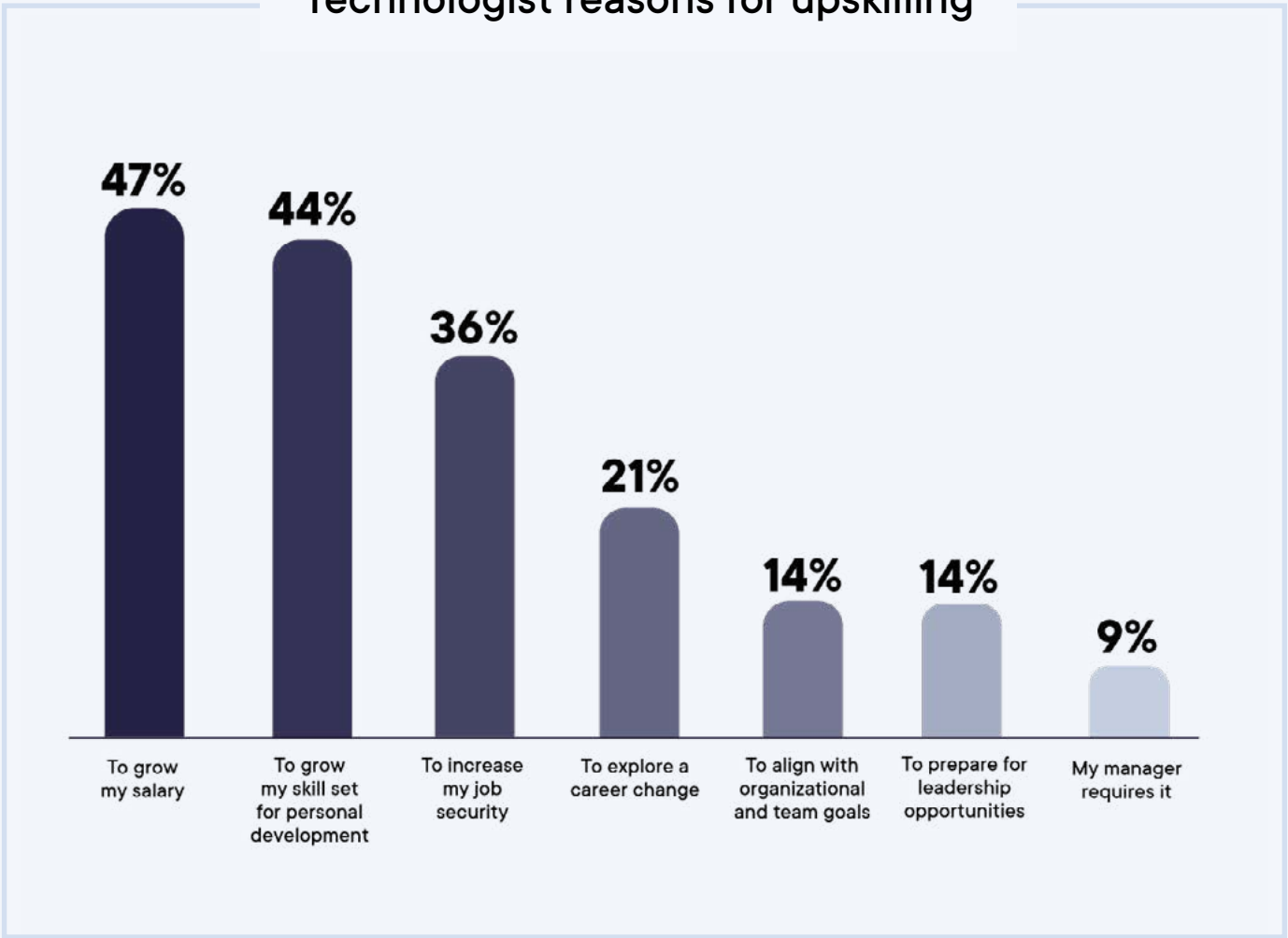


Upskilling gives technologists the ability to grow their salary and skill set, while HR/L&D directors can leverage tech skill development to improve retention, fill open roles, and increase engagement.

HR/L&D director reasons for upskilling



Technologist reasons for upskilling



Minimize cybersecurity risks

Consider the difference between these two statements:

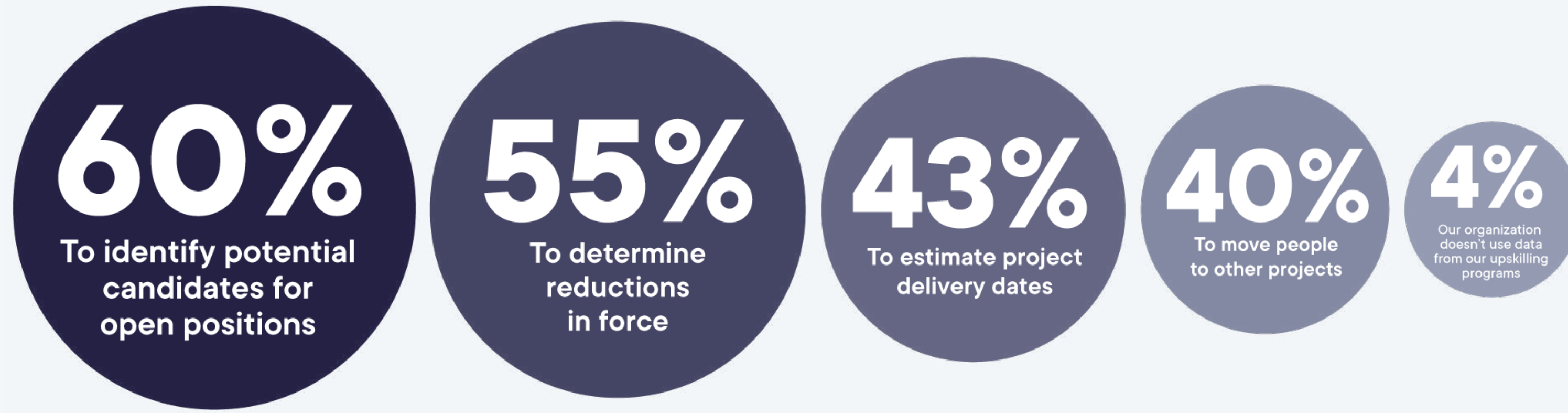
“I want everyone in my organization to complete the security upskilling program.”

“To take our new product to market with less risk by a specific date, my developers need to learn proper threat modeling techniques to protect against the [Open Web Application Security Project \(OWASP\) Top 10](#) and incorporate secure coding practices into the product development lifecycle.”

In the first example, tracking completion may be nice, but it may not actually tell you whether your developers gained the skills they need to make the product development lifecycle more secure.

The second statement identifies who needs to upskill, what skills they need to learn, when they need to learn the skills, and how skill development fits into broader organizational goals. You need all these components to see if upskilling had an impact on business outcomes.

If your developers' skills improved and the product had fewer security incidents than previous ones (and shortened timelines or lower costs as a result), you can point to upskilling as the cause.



Reduce hiring costs

According to [SHRM research](#), the average cost per hire is \$4,700, but the true cost is closer to three or four times the position's salary once you factor in the hard and soft expenses associated with hiring. For the [average software engineer](#) with a salary of \$119,348, that adds up to \$358,044 – \$477,392 in total hiring costs.

When you consider that **55% of tech managers (and 47% of HR directors) spend no more than \$5,000 per tech employee per year on upskilling and reskilling**, you don't have to be a mathematician to know that upskilling current talent is more cost-effective than hiring net new.

The good news? We found that 97% of HR directors prioritize developing internal talent over hiring for open positions. And 60% will use data collected from upskilling programs to identify potential candidates for those positions.

If you can show how your upskilling initiatives developed internal talent for open roles (and eliminated hiring costs), you've helped meet a strategic business goal and turned skill development from a cost center to a source of savings in the process.

And upskilling can impact cost management beyond hiring expenses, especially when applied to your dev and IT teams. Without programmatic tech skill development, you may face additional expenses in the form of deployment inefficiencies, security risks, and lost customers. In fact, the [IDC State of Global Skills](#) found that "DX-related IT skills shortages will affect 90% of organizations by 2025 . . . costing over \$6.5 trillion globally through the year due to delayed product releases, reduced customer satisfaction, and loss of business."*

"To build better products and deliver software more quickly, we needed to find talent to fulfill our growing need for engineering roles. Rather than solely relying on—and hoping—to hire new talent that had the skill set we needed, we decided to create an internal pipeline and produce great engineers from our existing talent."



[Watch the case study](#)

*IDC State of Global Skills, Doc #US49747822, October 2022

The takeaway

Effective upskilling is more than a checked box. **To be certain your tech skill development program makes an impact, you need to track metrics tied to goals and outcomes.** Only then will you be able to identify wins and make improvements.

And if you do it right, you can even show how upskilling optimizes expenses across your organization and reduces the cost of everything from hiring new talent to dealing with security breaches and project delays.

How's that for ROI?



To be certain your tech skill development program makes an impact, you need to track metrics tied to goals and outcomes.





Anchoring to success

Part 4

Where we're going

In the face of reduced workforces, skills gaps, and larger economic pressures, organizations and individuals alike have been asked to do more with less.

But in the case of upskilling, that doesn't necessarily mean scaling back. Rather, organizations need to reevaluate and optimize their investments to ensure they're helping technologists develop the right skills and driving ROI.

Technologists want to learn new tech skills, but they need support from tech and HR/L&D leaders, along with immersive learning opportunities. Organizations need to align upskilling with critical tech skills and business outcomes, guide technologists' learning journeys, and track success with well-defined metrics.

The main takeaway? Upskilling must remain a priority for future-focused organizations.

In fact, since upskilling allows you to close skills gaps and develop talent from within, it's the key to successfully navigating any economic environment.

To come out ahead, you can't leave it—or your people—behind.

*Wherever you're headed,
Pluralsight's upskilling solutions can
help you reach your destination.*

[Learn more](#)

About the survey

We blind surveyed 1,216 leaders and technologists for this report. It was critical to survey employees at all levels across departments to better understand the different viewpoints on upskilling and talent mobility that exist within organizations.

We broke out the report into sections that examine technologist and leader perspectives on a variety of topics with actionable suggestions you can carry into your org.

Position		Department	
Individual contributor	22%	IT Operations	49%
Manager	62%	Software engineering	20%
Director, VP, or Executive	16%	HR/L&D	19%
		Data science	12%

Region		Industry	
United States	33%	Software/IT/Data	44%
United Kingdom	33%	Healthcare	29%
India	17%	Financial services	15%
Australia	17%	Government	13%



About Pluralsight

Pluralsight helps organizations advance their technology workforce. Because the hardest part of building a business isn't building software and technology. It's building up the people who grow your business. That's why technology and HR/L&D leaders at businesses across the globe trust Pluralsight—the only partner that helps leaders build better teams and better products, all at the same time.

Our software and solutions are built to address your top challenges and outcomes, such as:

- Delivering better business outcomes with limited resources by closing skills gaps
- Improving retention and cutting hiring costs by filling talent gaps
- Developing internal cloud talent and enabling cloud transformation
- Onboarding new engineers faster
- Building products faster and improving developer experience

We offer practical, cost-effective ways to get better at building and implementing technology in a hybrid world: on-demand content, hands-on practice, certification prep, and virtual instructor-led learning across cloud, security, software development, IT Ops, and other tech domains. Backed by plans that match business strategies and objective data that measures how tech skills are improving over time.

No matter what your organization is facing today, we'll help you build a better tomorrow. Upskill to make the most of your people—and your products—with Pluralsight.



**Maximize your
upskilling investment**

[Learn more](#)