



2024 Technical Skills Report



Executive summary

The list of skills technologists and organizations need to succeed grows with each new tech advancement. But for many organizations, budgets and staff continue to shrink.

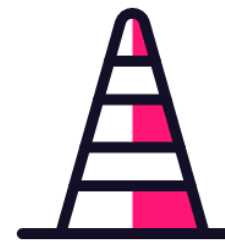
This creates a dilemma: How can organizations keep up with an ever-changing landscape, leverage new technologies, and drive business value, even as headcounts diminish and new challenges arise?

We surveyed 1,400 executives and IT professionals across the United States, United Kingdom, and India to find out. **Technical skills are the answer, but while 78% organizations have improved skills gaps, most still struggle to engage employees and create long-term value with upskilling initiatives.**

In this report, you'll uncover the insights you need to fill critical skills gaps, overcome challenges, and create a culture of learning that drives sustainable upskilling engagement.



Technologists and executives agree on the **top three technical skills gaps: Cybersecurity, cloud, and software development**. AI is at the bottom, but demand is growing—compared to last year, 11% more technologists are interested in building AI/ML skills.



The **top barriers to upskilling** are lack of time, leader support, and employee engagement.



On average, it costs **\$8,000+** more to hire a new IT employee than to upskill one.



It takes an **average of 10 weeks to hire for IT roles** in the United States, compared to the global average of 9 weeks.



Executives and technologists agree **the top two benefits of upskilling** are increased productivity and employee retention.



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PART ONE

Skills gaps persist

Cybersecurity and cloud remain top skills gaps. Employees bear the burden.

Let's start with the good news: Continuing to invest in technical upskilling despite economic conditions has started to pay off.

78% of organizations say their IT skills gaps have improved since last year.

Still, for nearly a quarter of organizations, skills gaps have either stayed the same or gotten worse over the past year, mainly due to loss of staff and challenges with new technologies.

This year, executives and technologists around the world agree the biggest gaps appear in cybersecurity, cloud, and software development—in that order. Cybersecurity and cloud have remained the two largest skills gaps since 2021. And this year, development replaced data as the third largest gap for the first time.

Executives & technologists agree

Top 3 technical skills gaps

- 1 Cybersecurity
- 2 Cloud
- 3 Software development

DESPITE THE HYPE

AI/ML skills are the lowest priority—but we expect them to grow.

Even though our [AI skills report](#) found that 87% of organizations plan to increase AI spending, and 95% believe AI initiatives will fail without staff who can use AI tools, executives and technologists are least concerned with AI/ML. There could be a few reasons for this:

- Organizations have other more immediate priorities and have not identified their AI initiatives yet.
- Organizations aren't yet widely using AI/ML in daily operations.
- AI/ML is still so new that organizations don't know what gaps they have.

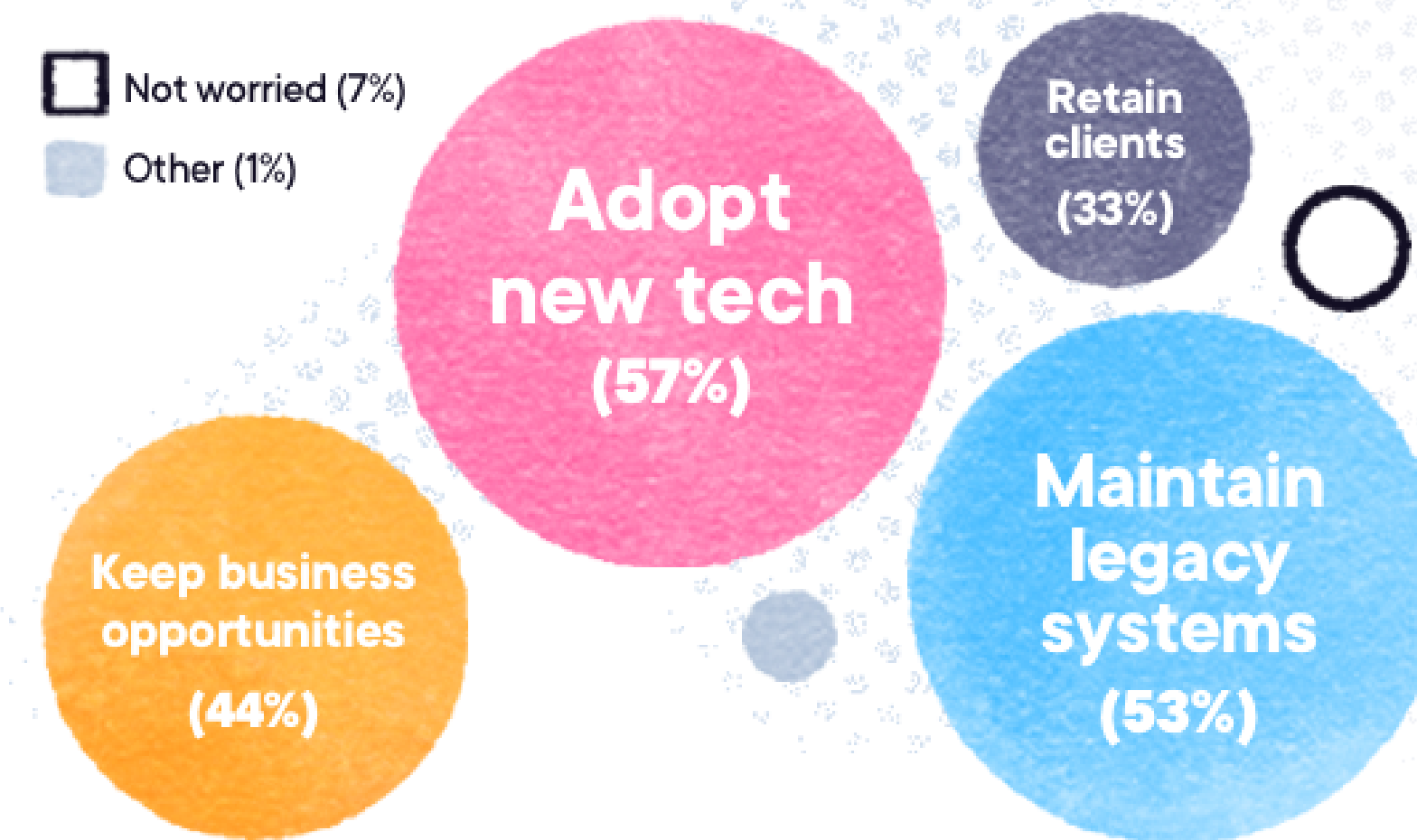
Regardless, the message is clear: Before prioritizing skills for tech trends, make sure your org has solid [security](#), [cloud](#), and [software development](#) skills. Technologists and executives agree they're critical to business operations—and they're the foundation on which all other tech rests.

Consequences of the tech skills gap

Even if your organization has built strong foundations, you need to stay on top of those skills to ensure gaps don't widen or reopen as tech changes.

The consequences of the skills gap can be severe, and it's usually technologists who bear the burden. In fact, **96% of technologists say their workload has increased due to the skills gap**. As workloads increase, so do burnout and stress.

Orgs worry the tech skills gap will make it hard to



Skills gaps can also lead to other organizational challenges, including lost time and money. **78% of organizations have abandoned projects partway through because they didn't have employees with the necessary IT skills**. Organizations are also worried the skills gap will mean they're unable to adopt new technologies, maintain legacy systems, and procure business opportunities and clients.

For upskilling to drive revenue and results, organizations need to continuously work to close the skills gap or risk overworking their employees and falling behind the latest tech—and the competition.

PART TWO

Filling the gap

Hiring vs. upskilling

When it comes to filling the technical skills gap, organizations typically have two options: hire new talent or upskill existing employees. Depending on your organization's situation, there is no "right" answer. But it *is* important to know how they compare to make an informed decision.

A short-term solution vs. a long-term investment

Organizations often think of hiring as a faster way to find top talent with the right tech skills.

The truth? Upskilling tends to be more cost-effective and more efficient.

At least half of organizations struggle to attract talent with the right skillset, dedicate the time required for training and onboarding, and retain new hires for more than a few months.

These challenges delay the hiring process and can leave roles sitting open for months at a time. In fact, it takes an average of nine weeks for organizations to fill

	Time to hire	Cost of hiring	Cost of upskilling
 US	10 weeks	\$23,450	\$15,231
 UK	8 weeks	£32,178	£22,385
 India	8 weeks	₹84,384	₹64,638

open IT positions, with the average time to hire reaching up to ten weeks in the United States.

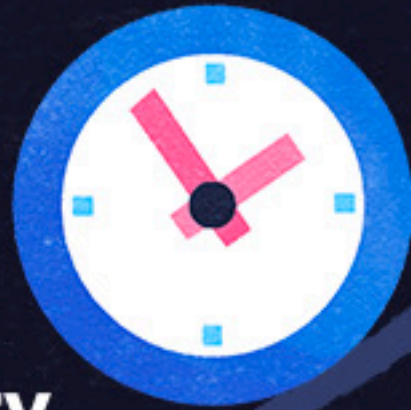
The cost of these open roles can be staggering. Let's say you have an open technologist role with an [average salary](#) of \$90,000 who will contribute an organizational value of 3x their salary. If it takes your organization the average of nine weeks to fill the role, the cost of vacancy can reach up to \$65,423.

Still, hiring someone with certain skills may seem like it'd be faster than training someone from the ground up. But 66% of organizations say hiring new talent takes longer or the same amount of time as upskilling existing talent.

That's not to mention the average cost of hiring new tech talent: \$23,450. The average cost of upskilling an IT employee? \$15,231—\$8,000 less. **More than half of organizations (57%) spend only \$5,000 per employee on upskilling.**

Benefits of upskilling

Increased
employee
productivity



Increased
employee
retention



Filling
skills gaps
in house



Creating a
strong culture
of learning



Building
a flexible
workforce



That's not all. **99% of organizations have benefited from upskilling, with many seeing increased productivity, employee retention, and flexibility.** 51% have also filled skills gaps in their organizations through upskilling.

In sum, hiring is typically only a stop-gap solution, not a long-term investment in your organization's growth. It's like trying to fix a burst pipe with duct tape. You can plug the gap and stop the rush of water for a bit, but you won't fix the root cause of the problem.

Upskilling, on the other hand, acts as a lasting seal. It lets you develop the exact skills and proficiencies you need in the moment while giving employees continual development opportunities. If you're deciding between hiring or upskilling for technical roles, consider:

- **Cost:** How much will it cost to recruit, hire, and onboard a new employee? How much will it cost to upskill a current employee?
- **Time investment:** How long will it take to train a new hire to learn your business? How long will it take to upskill an existing employee for a new role?
- **Retention risk:** What's your retention rate for new tech hires? How long have you retained the upskilling candidate?



PART THREE

Overcome barriers to upskilling

Organizations need a continuous learning culture

Even though organizations understand upskilling's power to close skills gaps, they often struggle to implement effective upskilling programs.

The top reason for this hasn't changed over the past three years: Employees don't have time to learn. They also lack support from leaders and aren't engaged with upskilling.

These three barriers tell the upskilling story in a nutshell: Because employees aren't getting support from leaders, they don't have dedicated time to learn and can't engage with available upskilling programs.

Executives & technologists agree

Top barriers to upskilling

1 Difficulty finding time for training

2 Lack of support from leadership

3 Employees not engaged with the programs

4 Lack of financial resources

Unlock upskilling engagement with a culture of learning

To create upskilling initiatives people actually engage with long term, organizations need to rethink upskilling. It's not about just filling skills gaps reactively. It's about creating a culture of continuous learning to fill gaps before they even appear.

According to Gartner® research,

“Heads of HR may choose to rely on a more conventional roadmap for employee upskilling that involves responding to talent needs through skills specialization and technical training. But, on its own, this approach will likely fail to anticipate the full range of competencies employees will need to advance in their careers. In fact, upskilling reactively leaves HR behind the speed of business, with employees applying only 54% of the new skills they learn.”*

Fostering a culture of learning won't be easy, but there are a few things organizations can do to get started.

Understand your organization's skills gaps

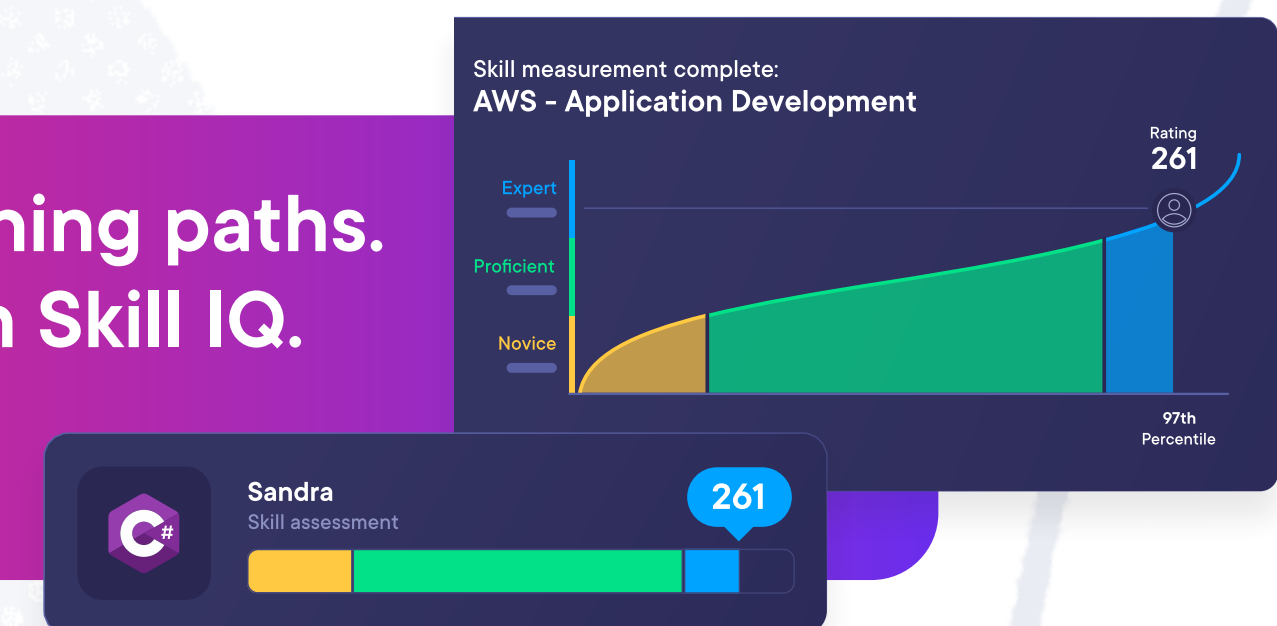
First, organizations need to assess their current skills so they can identify gaps and create upskilling initiatives that address them. This requires alignment between leadership and technologists.

At a high level, executives and IT practitioners agree on the top three tech skills gaps. **But only 33% of executives completely understand the skills their IT teams need, and 68% of technologists say leadership at their organization isn't aware of the skills gaps in IT.** Leaders need to dig deeper to uncover the specific cloud, security, and development skills technologists need, and how those gaps impact their ability to deliver.

Skill assessments are one way to benchmark current skill levels and determine specific areas for improvement. (54% of organizations already use them.) Once you identify the most critical skills gaps, explain why teams need to build these skills, tying them to projects on the roadmap where possible. This will give technologists a sense of purpose and connect upskilling to larger organizational goals.

Find gaps. Create custom learning paths. Execute faster. It all starts with Skill IQ.

Assess your team's skills



*Gartner, How CHROs Can Promote Employees' Digital Dexterity, By Human Resources Research Team, 22 March 2023.

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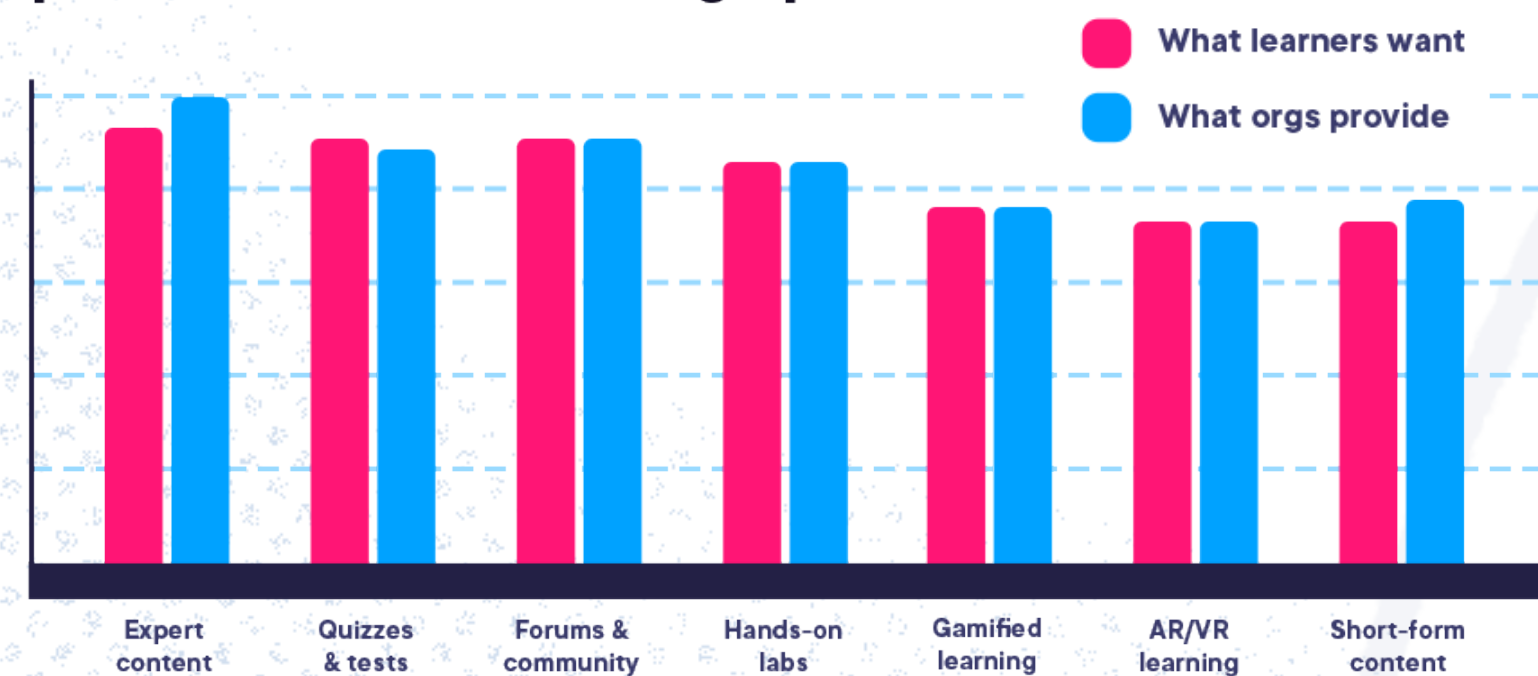
Provide upskilling resources that match technologist needs

To enable learning, organizations need to provide training resources that align with their skills gaps and technologists' needs.

For the most part, organizations are already doing this. They provide content created by industry experts, ways to track skill acquisition (such as quizzes), forums or community support, and [hands-on labs](#)—all features technologists look for in learning platforms.

If you aren't sure what your technologists need to upskill, ask them. Send out a survey or ask for input during a meeting to ensure your organization invests in resources your employees actually use.

What technologists want from learning platforms vs. what orgs provide



I feel that Arcadis is really giving me a chance right now by allowing me to take the hours necessary to follow this upskilling program because it shows me that they are also invested in the long term. I feel like it's a great way to show me that they're also committed to me as I am committed to them.

Thomas Mentink

Citizen Developer Participant, Arcadis

Create time to learn on the job

To overcome the biggest barrier to upskilling, organizations need to build learning into daily operations. Create a role or team responsible for tracking upskilling progress, holding leaders accountable, and creating policies and programs like mandatory learning time or upskilling academies.

Without an advocate who supports employee learning and manages leader accountability, upskilling won't scale across your organization. Teams will never *find* time to learn—you have to help them *make* it.

Offer incentives aligned with your employees' top motivations

Last year, technologists' top reason for upskilling was to grow their salary, which may be why many organizations motivate technologists to learn IT skills by offering opportunities for career advancement (60%) and financial incentives (58%).

But these incentives no longer align with technologists' main motivations for upskilling. This year, most technologists want to upskill to improve in their current roles. **Their top reasons for upskilling are now stronger job security and improved confidence**, a testament to the chaotic job market and wider economic conditions.

When possible, match your upskilling incentives to the top employee motivators. You'll improve program engagement and help your teams feel more confident. As their skills and confidence grow, their performance and innovation will, too. Every so often, reevaluate incentives to ensure they align with your employees' current motivations.

When it comes to motivation, orgs and employees often talk past each other

Why technologists upskill

The most important thing to me is job security & improved confidence



How orgs incentivize upskilling



What about career advancement opportunities & financial opportunities?

Career advancement and a higher salary would also be great!

What about custom training programs?

or a more learning-focused culture?

Well, I really want to feel secure in my role and confident in my skills



Build skill development into day-to-day operations

This final tip is also the trickiest to implement: Elevating upskilling from a program or platform to a culture of learning that sustains itself over time.

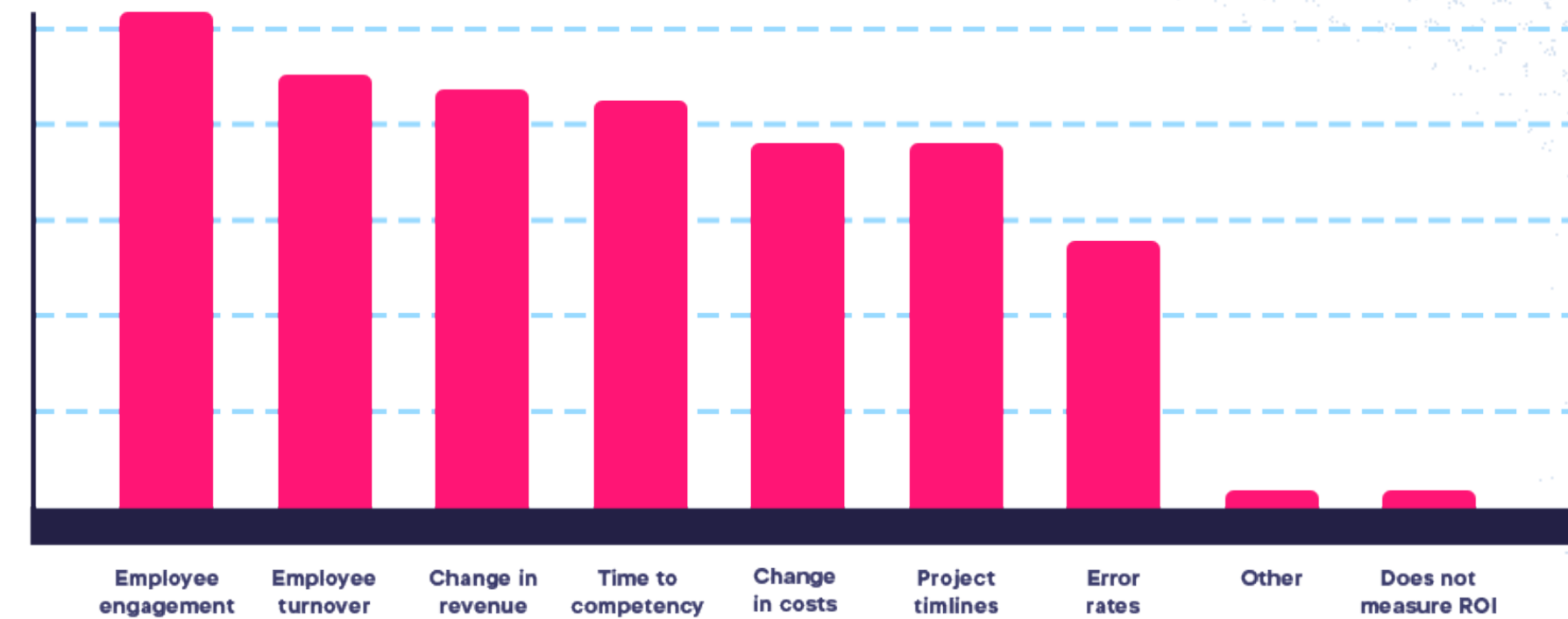
Basic tech skill development is table stakes. You have to be looking ahead and focusing on continuous learning to stay relevant and competitive.

Nicole Starling

VP of Strategic Transformation, Prudential

This shift requires organizations to rethink how they define upskilling success. Right now, 51% of organizations track employee engagement to measure upskilling success and ROI. It's the most used metric—but it doesn't tell the full story.

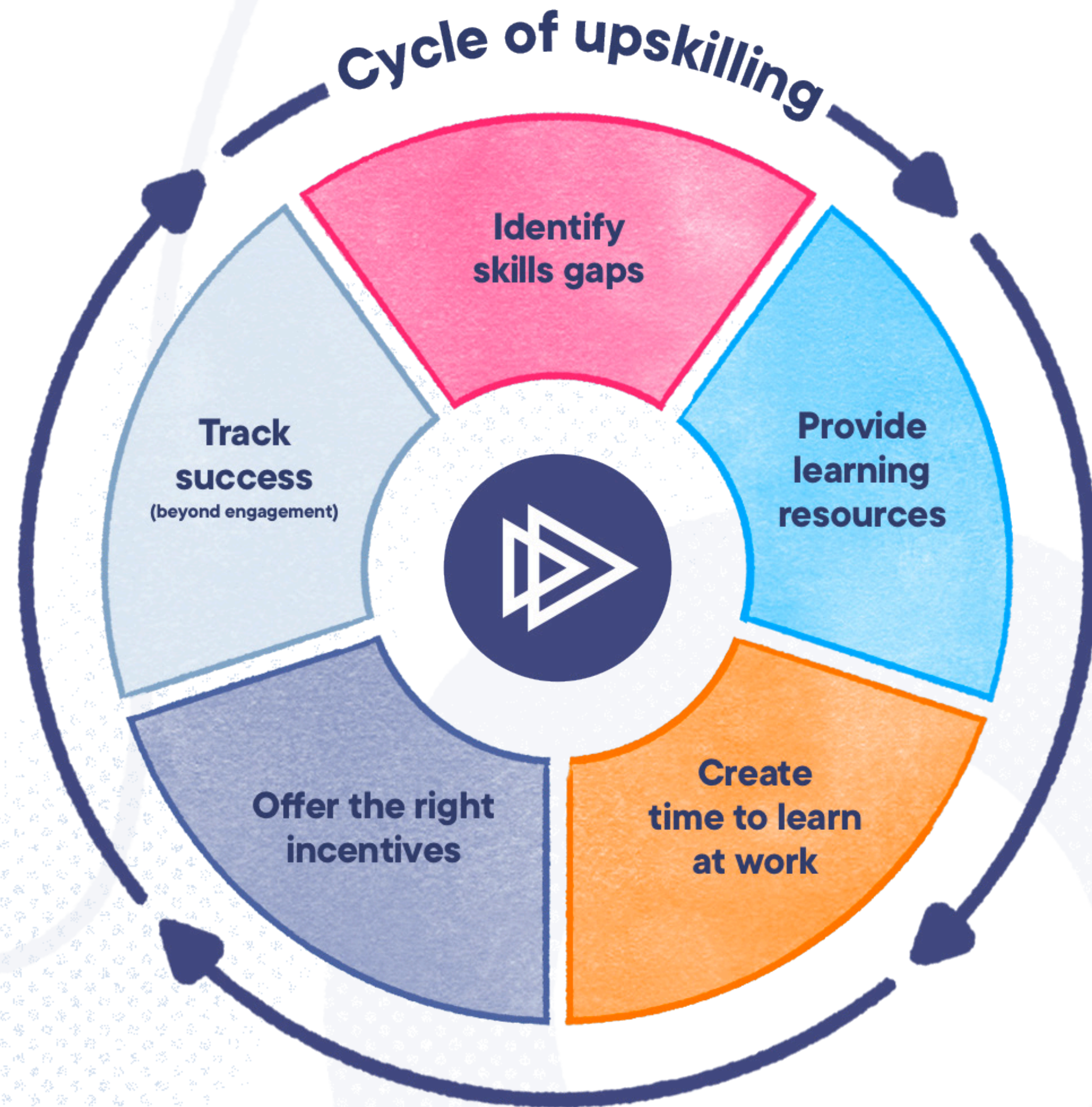
How orgs track upskilling ROI



With engagement alone, you don't know if upskilling has actually helped close skills gaps. You don't know if technologists can use what they've learned to adopt new technologies or take on upcoming projects.

That's why technologists are more concerned with skill acquisition.

For technologists, upskilling success occurs when they've learned a new skill and can use it in their day-to-day work (29%) and improve work or efficiency with it (13%).



After all, the end goal of upskilling isn't to learn new skills and knowledge. It's to be able to use new skills or knowledge to build better products, hit mission-critical objectives, or improve customer experiences.

When measuring upskilling success, look beyond engagement:

- How have technologists applied their new skills or knowledge on the job?
- How has upskilling increased technologists' confidence?
- How has upskilling improved work or efficiency, shortened project timelines, reduced error rates, or increased revenue?

If technologists are struggling to apply their learning at work, give them opportunities to use their skills and make mistakes. Build upskilling into daily sprints or weekly meeting agendas.

As technologists gradually bring their learning into their day-to-day responsibilities, support their long-term learning by repeating the process. Identify new skills gaps or areas to deepen existing knowledge. Provide relevant learning resources, time to learn, and incentives.

Then empower technologists to apply their new skills on the job, iterating and improving the process as you go. This turns skill development into a flywheel that becomes an integral part of your organization's culture.

CONCLUSION

Create a learning culture

Build long-term value with upskilling

Skills gaps may have improved since last year, but organizations need to maintain that momentum. Technologists don't just need upskilling opportunities, they need the resources and support to apply new skills on the job, too.

This evolution from skill acquisition to application requires an organization-wide culture shift where learning becomes part of daily life, as essential as a morning cup of coffee or a weekly team meeting.

As smaller teams struggle to manage increased workloads and never-ending tech advancements, **creating a culture of continuous learning is the only way organizations will be able to keep up with the constant changes, proactively close skills gaps, and leverage new technologies to build better.**

In other words, upskilling isn't just a matter of filling critical gaps today—it's about creating a culture of learning that can fill gaps tomorrow.



Close your skills gaps with Pluralsight



Methodology

For this report, we partnered with Wakefield Research to understand the technical skills landscape and provide leaders with the insights they need to fill current and future skills gaps.

To do this, we surveyed 1,400 executives and IT professionals across the United States, United Kingdom, and India.

Position

Executive	700	50%
IT practitioner	700	50%

Region

United States	600	43%
United States public sector	200	14%
United Kingdom	400	29%
India	200	14%

Industry

Tech/science/engineering	21%
Business/finance	18%
Law/policy	3%
Healthcare	6%
Sales/service	20%
Media/entertainment	6%
Heavy industry/utilities	20%
Other	7%

About Pluralsight

Pluralsight helps organizations around the globe 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. We're the only partner who helps leaders build better teams and better products, all at the same time.

Our upskilling solution helps you create the talent you need, when you need it. Pluralsight Skills pairs expert-authored courses with hands-on labs and sandboxes across cloud, security, software development, IT Ops, and other tech domains. Equip your teams with the skills they need to confidently execute strategic initiatives, adopt new technologies, and deliver improved customer experiences.

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