THE LINUX FOUNDATION | Research

THE LINUX FOUNDATION | Education

2026

State of Tech Talent Japan Report

Expanding Headcount and Closing the Skills Gap to Modernize Japan's Infrastructure

July 2026

Marco Gerosa, Ph.D., *Northern Arizona University*
Adrienn Lawson, *The Linux Foundation*

Foreword by Noriaki Fukuyasu,
The Linux Foundation

2026 State of Tech Talent Japan Report

Organizations are hiring because of AI, with net hiring effects of +49% in 2025, +54% in 2026, and +35% in 2027, substantially above the rest of the world (+20%, +26%, and +18%, respectively).

Unlike the rest of the world, **Japan shows a strongly positive net hiring effect** for entry-level technical positions (+46%).

Understaffing in DevOps, CI/CD, and site reliability is severe: Only 18% of Japanese organizations have dedicated staff in this domain, 51 percentage points below the global average.

Dedicated AI and ML headcount exists in only 13% of Japanese organizations, compared with 53% globally, a 40-percentage-point gap that puts Japan at significant risk of falling behind in operationalizing AI.

Capability gaps in AI operations and monitoring affect 52% of organizations, making it the most critical AI competency shortfall in Japan.

Lack of infrastructure skills (#1) and broader skills gaps (#2) are the leading barriers to realizing value from AI, whereas in the rest of the world, security concerns rank first.

Hiring inexperienced professionals and upskilling them (54%) is Japan's primary response to talent gaps.

Japanese organizations are 9.3 times more likely to upskill than to hire across strategic technology domains.

Upskilling is favored over hiring for staff retention (9.3x), time to productivity (9.0x), quality of work (7.8x), and understanding of business context (6.4x).

Hiring and onboarding new technical staff takes an estimated 81% longer than upskilling existing employees, and 46% of new hires leave within six months, twice the global rate.

Career growth (94%) and open source culture (88%) rank above compensation (87%) as retention strategies.

Hands-on employment experience (58%) and project portfolios (53%) are the top criteria for assessing technical candidates, favoring upskilling initiatives.

Contents

Foreword

Japan has never been short of ambition when it comes to technology. What we have sometimes lacked is the workforce to match it. For years, the IT talent shortage has been a quiet but persistent drag on our ability to modernize, and the rise of AI has made the question more urgent. Is the technology making things better or worse?

This report offers some reassuring news on that front. Among the organizations surveyed, AI is driving hiring growth in Japan's IT sector at nearly double the global rate. That is not the story many expected. And yet it sits alongside a harder truth: we do not yet have the people to do the work being created. Dedicated AI and ML staff exist in only 13% of Japanese organizations, compared with 53% globally. In DevOps and site reliability, the gap is even wider. We are, in many respects, building the plane while learning to fly it.

What the data also show, though, is that Japanese organizations are responding in a unique way. Rather than racing to hire from a talent market that cannot supply what is needed, most are investing in the people they already have. Fifty-four percent cite hiring inexperienced professionals and training them as their primary strategy, which is 25% points above the global average. On average, organizations here are 9.3 times more likely to upskill existing staff than to bring in new hires.

This reflects something real about how employment works in Japan. People join organizations, not just roles. They accumulate knowledge over time about the business, its processes, its customers that does not transfer easily from outside. That knowledge matters enormously when building technology that is meant to serve the organization, not just function within it.

There is a further dimension to the talent challenge that this data does not fully capture, but which is becoming impossible to ignore: sovereignty. AI is accelerating a profound shift in how nations and organizations think about control over their technology stack. Sovereign AI, sovereign infrastructure, data sovereignty — these are no longer aspirational concepts but operational imperatives. Building and maintaining these capabilities demands deep, specialized talent, and that demand is urgent.

The Linux Foundation's role in this is to make upskilling as effective as possible. Through open source communities, training programs, and vendor-neutral certifications, we work to ensure that the skills required for modern infrastructure, such as cloud, containers, AI operations, cybersecurity, are within reach for organizations willing to invest in their people. The gaps identified in this report, particularly in DevOps, infrastructure, and AI operations, map closely to areas where the Foundation has deep community expertise.

Japan has the intent, the workforce culture, and increasingly the urgency to close these gaps. What is needed now is sustained commitment from organizations, from government, and from the broader technology community to make it happen.

Noriaki Fukuyasu
Vice President of Japan Operations
The Linux Foundation

Executive summary

Japan faces a significant labor crisis rooted in decades of demographic decline.[1] Automation has been one important response to Japan's labor constraints. The adoption of AI raises a question: is it automating and displacing jobs or is it requiring new professionals to deploy, manage, and govern the technology itself? Beyond the question of net hiring effects, other questions emerge. Is Japan's infrastructure capable of supporting AI workloads in production? Does its workforce possess the competencies required to operationalize AI across the full stack? And what strategies are Japanese organizations employing to address their workforce development needs? The 2026 State of Tech Talent Japan Report examines these questions based on an industry survey of 400 participants, including 80 respondents from Japan.

Despite negative media reports about layoffs in the tech industry due to AI, our findings show that AI is acting as a strong net driver of job creation in Japan's IT sector, with a net hiring effect of +54% expected for 2026 and +35% for 2027, substantially above the rest of the world (+26% and +18%, respectively). The share of Japanese organizations expecting AI to reduce headcount is falling over time, from 16% in 2025 to just 3% in 2027, a trend that runs counter to the global trajectory, where the share expecting decreases rises from 13% in 2025 to 22% by 2027. Unlike in other regions, Japan also shows a strongly positive net hiring effect for entry-level technical positions (+46%), in contrast to the rest of the world, where entry-level hiring shows a negative net effect (−2%), suggesting that Japan continues to invest in building talent pipelines from the ground up.

However, this hiring momentum coexists with a significant and widening capability gap. Dedicated AI and ML headcount exists in only 13% of Japanese organizations, compared with 53% globally, a 40-percentage-point gap that puts Japan at risk of being unable to adequately deploy AI in production. The gap is even wider in DevOps, CI/CD, and site reliability, where only 18% of Japanese organizations have dedicated staff, compared with 68% globally. These staffing shortfalls coincide with capability gaps: 52% of organizations report insufficient capacity in AI operations and monitoring, and 49% in AI security and risk management.

The data also suggest that the primary obstacle to realizing value from AI in Japan is not the technology itself but gaps in infrastructure readiness and the skills required to build and manage it. A lack of infrastructure skills is cited as the leading barrier by 29% of Japanese organizations, 10 percentage points above the rest of the world, where security concerns rank first (48%). This is symptomatic of a broader full-stack readiness

1 https://www.metaintro.com/blog/japan-tech-jobs-boom-ai-engineering-talent-reshaping-workforce-2026

problem. Japan's enterprise IT infrastructure remains more anchored in legacy and on-premises environments than that of its international peers, with only 23% of workloads running on public cloud compared with 40% globally. Deployment of the PARK stack, the integrated set of capabilities required to move AI from experimentation into production, is uneven, with Ray and distributed computing adopted by only 48% of Japanese organizations, and Kubernetes by 57%, compared with 72% globally.

To bridge these full-stack and skills gaps, Japanese organizations turn to internal development. Hiring inexperienced professionals and upskilling them is the top strategy to fulfill the technological needs of the organization, cited by 54%, 25 percentage points above the rest of the world. Overall, organizations are 9.3 times more likely to upskill than to hire across strategic technology domains. This strong preference is reinforced by the economics and risks of external hiring: onboarding new technical staff takes an estimated 81% longer than upskilling existing employees, and 46% of new hires depart within six months, compared with 23% globally. When nearly half of external recruits leave within six months, a significant part of the investment in recruitment and onboarding is lost.

Upskilling may also offer strategic advantages beyond cost, especially where institutional knowledge is important. One potential advantage of upskilling internal staff is that existing employees may be better positioned to build AI systems aligned with institutional context and culture, an advantage that is difficult to replicate by hiring externally. Upskilling is strongly preferred over hiring for staff retention (9.3x), time to productivity (9.0x), quality of work (7.8x), and understanding of business context (6.4x). Retention further reinforces the case for investing in internal development: career growth ranks first among retention strategies (94%), above compensation at 87%. Open source culture ranks second at 88%, also above compensation. These findings suggest that prioritizing continuous internal development across the full stack may be an important component of Japan's AI scaling strategy.

Introduction

Over the past several years, the Linux Foundation has surveyed the industry to assess the state of the technical talent market amid technological and economic shifts. This year's study is based on an online survey conducted in February 2026, focusing on the impact of AI, technical hiring, and the skills gap. The survey received 400 responses from participants responsible for hiring, training, and managing technical talent. This report analyzes responses from Japan (80 participants) and, when relevant, compares them with responses from the rest of the world (320 participants).

The survey investigates questions such as: Is AI creating value at the expense of technical jobs? Where do organizations expect AI to deliver value? Is Japan's technological infrastructure ready to support AI workloads? To what extent do organizations have the skills needed to operationalize AI? And how are they building those skills?

Our analysis highlights the value of skill development programs, including upskilling (deepening existing capabilities) and cross-skilling (expanding expertise across domains). For consistency, we use the term "upskilling" throughout this report to refer to both of these complementary training approaches.

The AI impact on IT jobs

AI is creating a positive net hiring effect

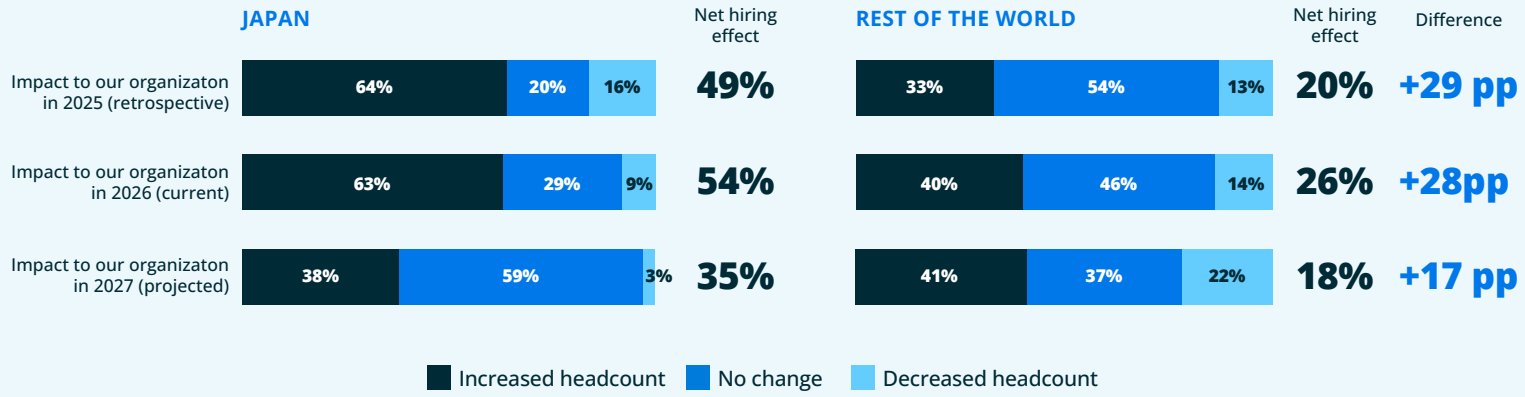
Japan faces a significant IT talent shortage, estimated at 220,000 workers in 2018 and projected to widen to 450,000 by 2030.[2] AI could intensify this gap further by increasing demand for technical talent faster than the workforce can expand.

Our survey data suggest that AI is already increasing demand for IT talent. As shown in Figure 1, more organizations report increasing headcount in response to AI than reducing it, producing a positive net hiring effect across surveyed Japanese organizations. The net hiring effect was +49% in 2025 and is expected to rise to +54% in 2026. Although the projected effect moderates in 2027, it remains clearly positive at +35%.

FIGURE 1: A POSITIVE NET HIRING EFFECT IN IT FROM 2025 THROUGH 2027

How has AI impacted or will impact the headcount of your organization?

2026 Tech Talent, Q21, Sample Size Japan = 80, Sample Size Rest of World = 320, not applicable and DKNS excluded. Net Hiring Effect = % increase - % decrease



2 https://www.meti.go.jp/policy/it_policy/jinzai/gaiyou.pdf

Thus, among surveyed organizations, AI currently appears to be driving demand for technical talent rather than displacing it.

Compared with the rest of the world, Japan shows a substantially stronger positive net hiring effect from AI across all three years. In 2025, Japan's net hiring effect reached +49%, compared with +20% for the rest of the world, a difference of 29 percentage points. This gap remains similarly large in 2026, at +54% in Japan versus +26% elsewhere, and narrows in 2027, at +35% compared with +18% for the rest of the world.

The direction of change also differs. In Japan, the share of organizations expecting AI to decrease headcount falls over time, from 16% in 2025 to 9% in 2026 and just 3% in 2027. In the rest of the world, the pattern runs in the opposite direction: the share expecting decreases rises from 13% to 14% to 22%.

These results suggest that AI is creating a stronger demand for technical talent in Japan than in other regions, reinforcing concerns that the country's existing IT talent shortage may become even more acute.

Our results are consistent with recent OECD findings,[3] which suggest that AI-related job losses appear less common in Japan than in other countries. The OECD reports that workers at Japanese companies are more likely to expect AI to create jobs over the next ten years than to eliminate them. This pattern may reflect Japan's unique employment system — hiring into companies rather than into specific roles, with regular HR-led internal rotations under long-term employment practices. Labor shortages, intensified by a declining birth rate and an aging population, may also explain why AI-induced job losses appear less common in Japan than in other countries.

Projections from other sources also point toward net job growth. The World Economic Forum's Future of Jobs Report 2025 projects a net global increase of 78 million jobs by 2030, with 170 million new roles created against 92 million displaced.[4] Economists note that fears of AI-driven job displacement can reflect the "lump-of-labor" fallacy:[5] the assumption that the total amount of work in an economy is fixed, such that productivity gains must come at the expense of jobs. Historical evidence suggests otherwise. When powerful technologies reduce the cost of an input, demand typically expands to create new roles and industries rather than simply eliminating existing ones.

Nevertheless, these findings diverge from press reports attributing layoffs to AI. Other factors, such as macroeconomic conditions, post-pandemic workforce corrections, and geopolitical pressures, may also contribute to job cuts, but receive less attention when AI offers a more compelling explanatory frame. At the same time, our findings should be interpreted cautiously. The survey captures self-reported perceptions within the IT sector and does not isolate AI's independent contribution from broader economic conditions, sectoral growth cycles, or organizational investment decisions that may have coincided with AI adoption. Moreover, the organizations represented here may be skewed toward those actively investing in AI. Finally, whether the findings presented here reflect a durable effect or a transitional phase that may correct as automation matures remains an open question.

AI is reshaping technical roles

We also observe strong positive net hiring effects at the role level (Figure 2). Software development positions lead at +56%, followed by AI-specific roles (+48%), entry-level technical positions (+46%), IT operations staff (+44%), technical management (+42%), and QA/testing (+41%). Japan shows stronger net hiring effects across all categories except AI-specific roles, where Japan (+48%) trails the rest of the world (+64%), indicating that the net hiring effect for AI-specific roles is 16 percentage points lower in Japan than in the rest of the world.

3 https://www.oecd.org/en/publications/artificial-intelligence-and-the-labour-market-in-japan_b825563e-en.html

4 World Economic Forum, "The Future of Jobs Report 2025," https://www.weforum.org/publications/the-future-of-jobs-report-2025/

5 https://www.stlouisfed.org/publications/page-one-economics/2020/11/02/examining-the-lump-of-labor-fallacy-using-a-simple-economic-model

FIGURE 2

The net hiring effect was positive across technical positions in Japan

2026 Tech Talent, Q22, Sample Size Japan = 80, Sample Size Rest of World = 320, not applicable and DKNS excluded.
Net Hiring Effect = % increase − % decrease, detailed data in appendices A1.1 and A1.2

	Japan	net hiring effect 2025	Rest of the World
Software development positions	+56%		+21% (▼ -35pp)
AI-specific roles	+48%		+64% (▲ +16pp)
Entry-level techncal positons	+46%		-2% (▼ -48pp)
IT operations staff	+44%		+10% (▼ -34pp)
Technical management roles	+42%		+17% (▼ -25pp)
QA /testing positions	+41%		+10% (▼ -31pp)

Particularly notable is Japan's positive net hiring effect for entry-level technical positions (+46%), which stands in sharp contrast to the rest of the world, where entry-level hiring showed a negative net effect (−2%). This divergence may reflect structural features of the Japanese labor market, including long-standing recruitment practices oriented toward internal training pipelines. While other regions appear to be reducing junior hiring as AI takes on entry-level tasks, Japan continues to bring new workers into the profession, though the skills expected of those entrants are likely shifting toward AI collaboration, integration, and oversight.

This growth coexists with a reshaping of roles within the profession. Developers acknowledge that their work is changing,[6] with greater emphasis on architecture, integration, and AI-enabled decision-making. Japanese AI users tend to perceive AI as complementing their skills rather than making them obsolete.[7] However, many Japanese workers expect AI to substantially change the abilities and skills required over the next ten years.

6 BairesDev, "Dev Barometer 2025: A New Generation of AI-Native Developers — The Impact of AI on Software Developers and What to Expect in 2026," White Paper, 2025. https://www.bairesdev.com/files/Dev_Barometer_2025_White_Paper.pdf

7 https://www.oecd.org/en/publications/artificial-intelligence-and-the-labour-market-in-japan_b825563e-en.html

Skills-related gaps are becoming a serious challenge amid the acceleration of technological change driven by generative AI and structural workforce shortages,[8] reinforcing the need for sustained upskilling investment to prepare the workforce for the roles AI is creating and reshaping.

Gains are expected across core activities

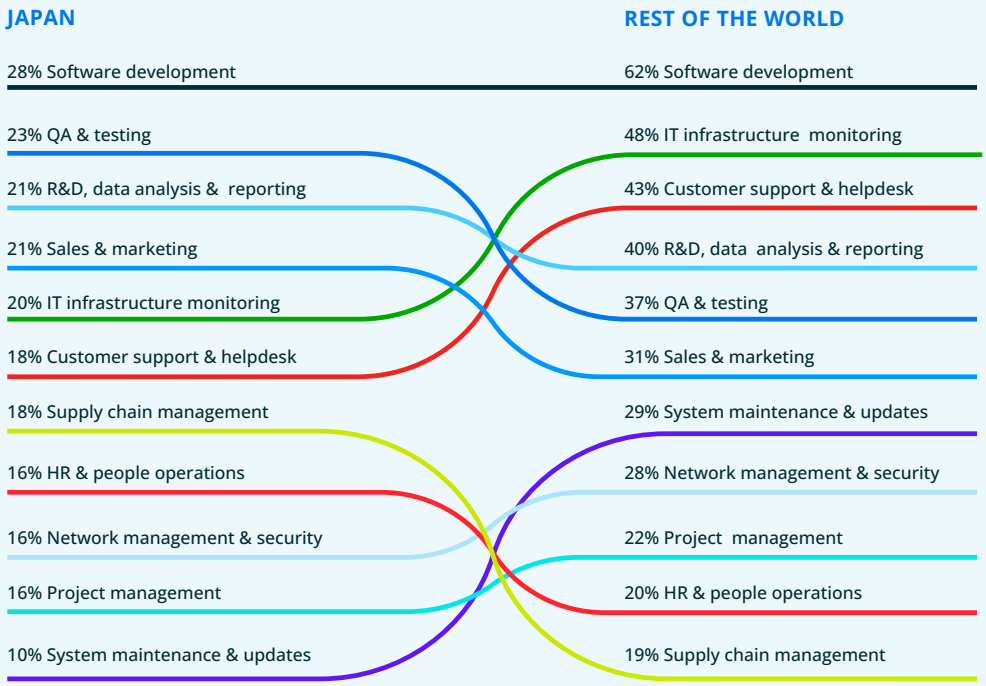
Organizations expect AI-driven gains across core activities, as shown in Figure 3. However, across these activities, Japan trails the rest of the world by an average of 16 percentage points. This result is consistent with other reports showing that Japan's current AI utilization rates remain lower than those of international peers.[9] Nevertheless, 100% of Japanese respondents report plans to use AI, compared with 96% in the rest of the world, suggesting that the differences are not due solely to lack of interest. Other factors, potentially including skills gaps, infrastructure readiness, or organizational risk tolerance, may also play a role.

Software development (28%) ranks first among the activities where Japanese organizations expect AI to deliver significant value. This mirrors the global ordering, where software development also tops the list at 62%. Nevertheless, the 35-percentage-point gap is the largest observed across all activities and points to a substantial difference in how confidently Japanese organizations anticipate that AI will transform their development workflows. This may reflect

FIGURE 3: EXPECTED AI GAINS ACROSS CORE ACTIVITIES

Where does your organization expect AI to deliver SIGNIFICANT value across the following core activities? (select all that apply)

2026 Tech Talent, Q23, Sample Size Japan = 80, Sample Size Rest of World = 320, Total Mentions = 1,378, DKNS excluded (3%)



8 https://www.meti.go.jp/english/press/2025/0523_003.html
9 https://www.oecd.org/en/publications/artificial-intelligence-and-the-labour-market-in-japan_b825563e-en.html

the relatively early stage of adoption of AI-assisted development tools in Japan, rather than skepticism about the technology's potential. Recent investments in agentic AI infrastructure, including the Linux Foundation's launch of the Agentic AI Foundation[10] to support emerging AI coding agents, could support this trajectory by strengthening the infrastructure around AI coding agents.

Beyond software development, Japanese organizations expect AI gains in quality assurance and testing (23%), R&D, data analysis and reporting (21%), and sales and marketing (21%). IT infrastructure monitoring (20%), customer support and helpdesk services (18%), supply chain management (18%), network management and security (16%), project management tasks (16%), and HR and people operations (16%) follow closely.

10 Linux Foundation, "Linux Foundation announces the formation of the Agentic AI Foundation," Press Release, Dec. 9, 2025. **https://www.linuxfoundation.org/press/linux-foundation-announces-the-formation-of-the-agentic-ai-foundation**

The need for modernization of Japanese infrastructure

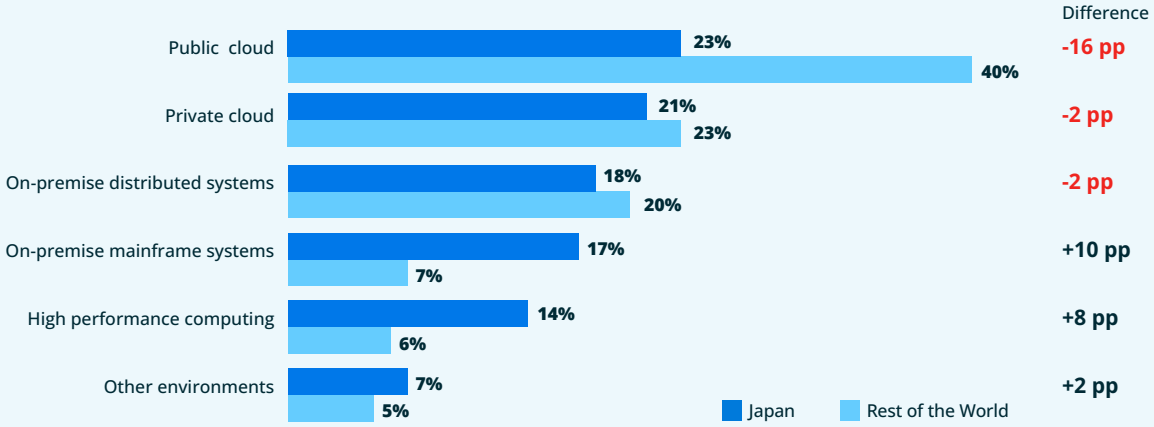
Achieving the AI gains that Japanese organizations expect will require significant changes to the underlying infrastructure on which AI workloads run. The IT infrastructure forms the foundational layer that determines whether AI can be deployed reliably, scaled efficiently, and integrated into production workflows.

As shown in Figure 4, Japan currently runs 23% of its total IT workload on public cloud, compared with 40% in the rest of the world, a gap of 16 percentage points. Conversely, Japan allocates a notably larger share of workloads to on-premises mainframe systems (17% versus 7%, a difference of +10 pp) and high-performance computing environments (14% versus 6%, +8 pp). This profile suggests that Japan's enterprise IT infrastructure remains more anchored in legacy and on-premises environments than that of its international peers, which may constrain the agility and scalability required for AI deployment at scale.

FIGURE 4: JAPAN'S IT WORKLOAD RUNS MORE HEAVILY ON LEGACY INFRASTRUCTURE THAN THE REST OF THE WORLD

Approximately what percentage of your total IT workload runs on each of these computing environments?

2026 Tech Talent, Q16, Sample Size Japan = 80, Sample Size Rest of World = 320, Averages



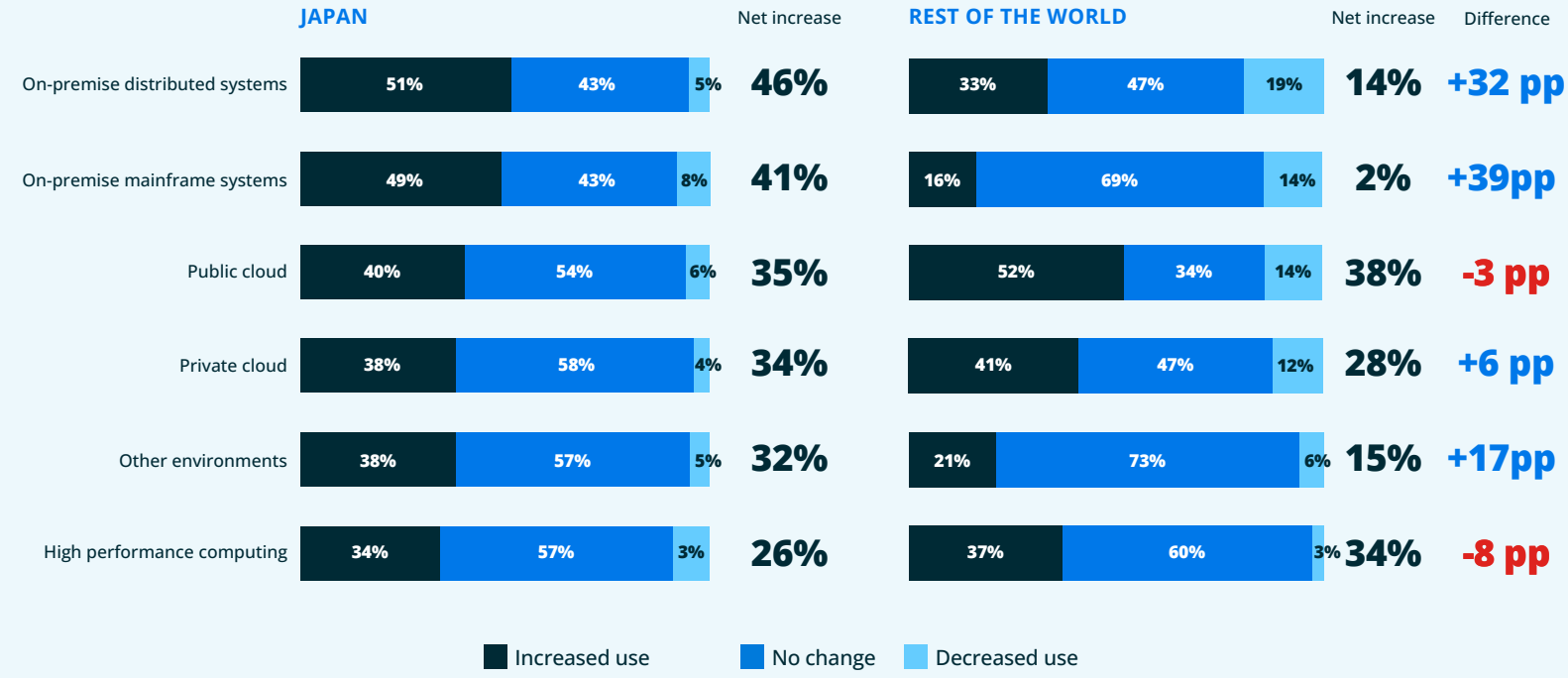
Japanese organizations are not only running IT workloads on legacy infrastructure more often than in the rest of the world, but also expanding their use more aggressively. As shown in Figure 5, the net increase for on-premises distributed systems stands at +46% in Japan versus +14% in the rest of the world (+32 pp difference), and the gap is even wider for on-premises mainframe systems, where Japan's net increase of +41% compares with just +2% globally (+39 pp difference).

Public cloud adoption is also growing, with a net increase of +35% in Japan, but marginally below the +38% recorded in the rest of the world. Japan trails in high-performance computing, where the rest of the world shows a net increase of +34% compared with +26% in Japan, a gap of 8 percentage points. These trends suggest a hybrid modernization strategy in which Japanese organizations are expanding across multiple environments simultaneously rather than committing to a single infrastructure path.

FIGURE 5: JAPAN PLANS TO EXPAND ON-PREMISES INFRASTRUCTURE OVER THE NEXT 18 MONTHS

Over the next 18 months, how will the use of each of these computing environments change in your organization?

2026 Tech Talent, Q17, Sample Size Japan = 80, Sample Size Rest of World = 320, DKNS excluded. Net Increase = % increase - % decrease



Our results also show that the infrastructure required to deploy AI in production is adopted unevenly across the surveyed organizations (Figure 6). The PARK stack, a layered architecture for production AI first introduced by Ben Lorica,[11] is in early-to-mid stages of adoption, with deployment rates varying across its four layers. Much like the LAMP stack bundled complementary technologies for building, hosting, and maintaining web applications, PARK provides a common shorthand for the integrated set of capabilities organizations must assemble to move AI from experimentation into production.

11 Ben Lorica, "The PARK Stack Is Becoming the Standard for Production AI," https://gradientflow.com/park-stack/

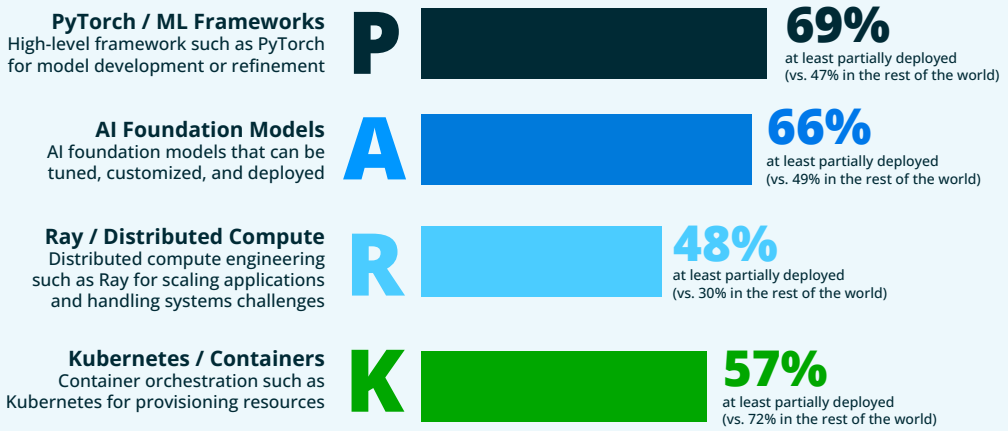
The PARK stack comprises PyTorch and equivalent ML frameworks (P) for model development and refinement (which 69% of Japanese organizations have at least partially deployed), AI foundation models (A) for providing base intelligence (66%), Ray and distributed compute (R) for scaling applications across systems (48%), and Kubernetes and containers (K) for resource provisioning and orchestration (57%). In contrast to the infrastructure trends described above, Japan reports higher deployment than the rest of the world on three PARK stack layers, trailing only on Kubernetes.

Japan's adoption rate of Kubernetes and container orchestration at 57% trails the rest of the world at 72%, a gap of 15 percentage points. Container orchestration is critical for deploying and scaling AI applications in production environments,[12] and this lag may constrain Japan's ability to scale AI workloads. For inference-heavy use cases, Kubernetes can support autoscaling, cost optimization, multi-provider fallback, and latency management, making it a natural fit as AI moves into production. Recognizing this, the Cloud Native Computing Foundation (CNCF) launched the Certified Kubernetes AI Conformance Program in November 2025,[13] a community-led effort to define and validate standards for running AI workloads on Kubernetes.

FIGURE 6: DEPLOYMENT RATES FOR PARK INFRASTRUCTURE TECHNOLOGIES

What progress has your organization made in implementing each layer of the PARK stack?

2026 Tech Talent, Q20, Sample Size Japan = 80, Sample Size Rest of World = 320, DKNS excluded, 'At least partially deployed' = fully + partially deployed, detailed data available in appendices A2.1 and A2.2



12 Lawson and Sica, "CNCF Annual Cloud Native Survey: The Infrastructure of AI's Future," Cloud Native Computing Foundation (CNCF), The Linux Foundation, Jan. 2026. https://www.cncf.io/wp-content/uploads/2026/01/CNCF_Annual_Survey_Report_final.pdf

13 Cloud Native Computing Foundation, "CNCF Launches Certified Kubernetes AI Conformance Program to Standardize AI Workloads on Kubernetes," CNCF, Nov. 11, 2025. https://www.cncf.io/announcements/2025/11/11/cncf-launches-certified-kubernetes-ai-conformance-program-to-standardize-ai-workloads-on-kubernetes/

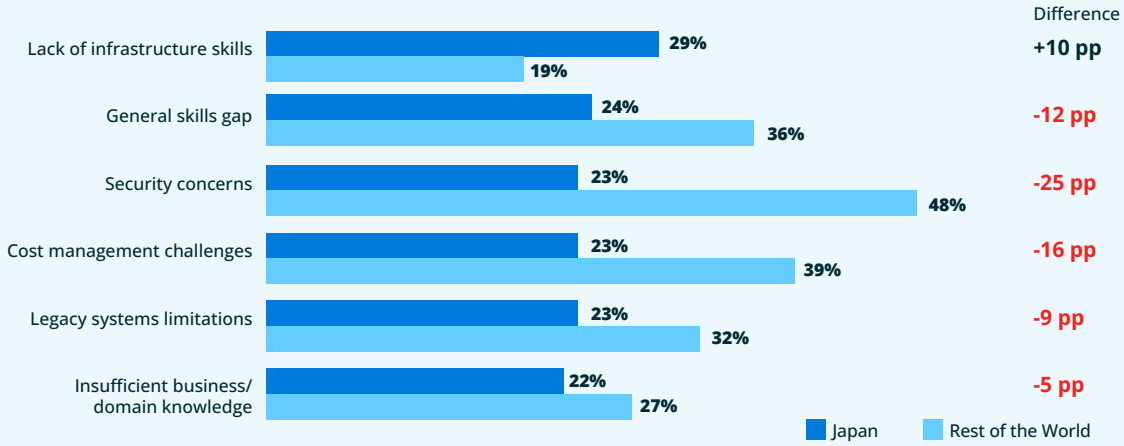
Lack of skills is a top barrier to technology adoption in Japan

When asked what prevents their organizations from realizing value from AI (Figure 7), Japanese respondents ranked a lack of infrastructure skills as the top barrier, at 29%, 10 percentage points higher than in the rest of the world, where this barrier ranks last. In Japan, infrastructure skills rank ahead of broader skills gaps (24%), security concerns (23%), cost management challenges (23%), legacy system limitations (23%), and insufficient business or domain knowledge (22%). This suggests that, for Japanese organizations, the challenge is not only the lack of infrastructure, but also the technical foundation needed to build it.

FIGURE 7: TOP BARRIERS TO REALIZING VALUE FROM AI

What are your organization's top barriers to getting value from AI? (select up to three)

2026 Tech Talent, Q26, Sample Size Japan = 80, Sample Size Rest of World = 320, Total Mentions = 805, DKNS excluded, top responses shown



In contrast, the most cited barrier for the rest of the world is security concerns (48%, a 25 pp gap). Security concerns are especially relevant as organizations experiment with agentic AI systems. AI agents can be granted the ability to operate semi-autonomously, including sending emails, querying databases, calling APIs, or making decisions. Unlike deterministic software, for which the same input produces the same output, systems based on generative AI behave probabilistically, and the same input can yield different actions across runs, making their behavior difficult to anticipate, test, or control. The security community has begun formalizing responses to these risks. OWASP (the Open Worldwide Application Security Project) launched its Top 10 for LLM Applications as a community-driven effort to identify and address security issues specific to AI applications.[14]

14 OWASP Gen AI Security Project, "OWASP Top 10 for LLM Applications 2025," Nov. 17, 2024. https://genai.owasp.org/resource/owasp-top-10-for-llm-applications-2025/

Addressing security risks and operational gaps requires dedicated technical staff. However, Figure 8 shows that Japan trails the rest of the world in technical headcount across most technology domains. The largest gaps appear in DevOps, CI/CD, and site reliability (18% in Japan versus 68% globally, a difference of 51 pp) and AI and ML (13% versus 53%, a 40 pp gap). Japan also lags considerably in cybersecurity (26% versus 62%, a 35 pp gap), data and analytics (21% versus 51%, a 30 pp gap), and cloud and containers (44% versus 71%, a 27 pp gap).

The low share of organizations with dedicated AI and ML headcount is particularly significant given the AI-related productivity gains organizations expect. Without staff capable of building, deploying, and maintaining AI systems, the PARK stack deployments and infrastructure expansions described in the preceding section may not translate into operational value.

Not surprisingly, a substantial portion of Japanese organizations perceive capability gaps in key AI competencies, as shown in Figure 9. The most significant capability gap is in AI operations and monitoring at 52%, followed by AI security and risk management (49%) and business domain expertise (39%).

These findings challenge a common assumption about AI readiness. AI readiness is sometimes framed narrowly as training staff on prompt engineering or new tools. However, the data suggest a need to build technical fluency and operational readiness across the full stack that supports AI in production. In other words, the skills gap is not an AI problem narrowly defined, but a full-stack readiness problem.

FIGURE 8: JAPAN HAS LESS TECHNICAL HEADCOUNT ACROSS MOST TECHNOLOGY DOMAINS

Which of the following technology areas are staffed by technical headcount in your organization? (select all that apply)

2026 Tech Talent, Q15, Sample Size Japan = 80, Sample Size Rest of World = 320, DKNS excluded, top 8 shown, full list available at Appendix A3

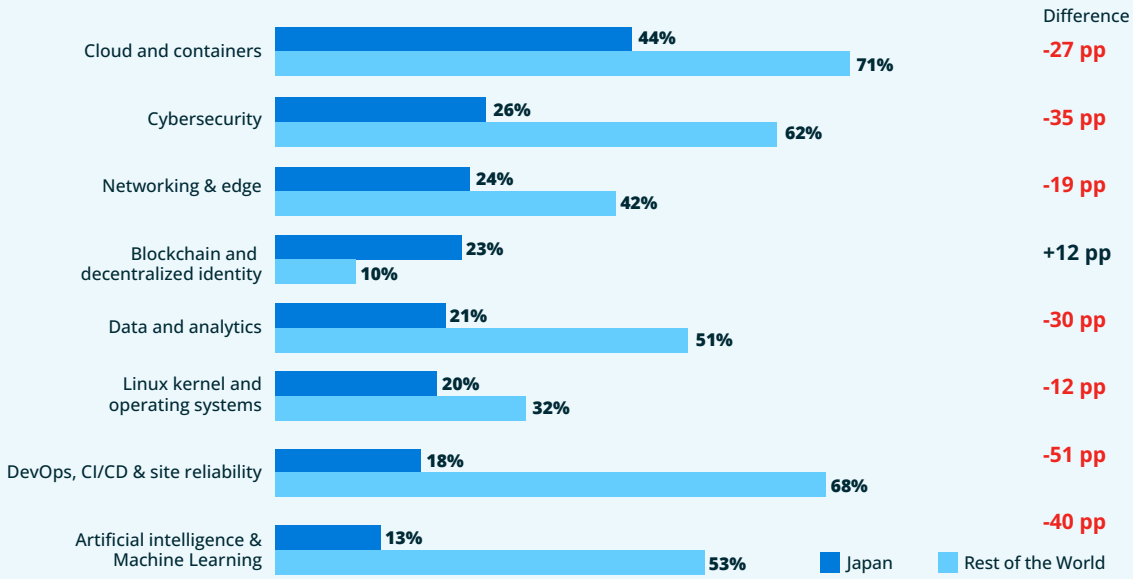
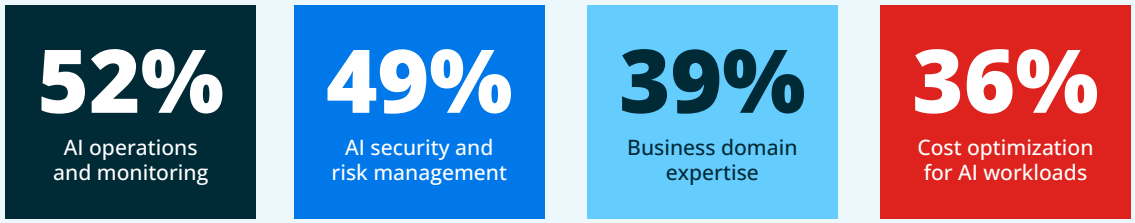
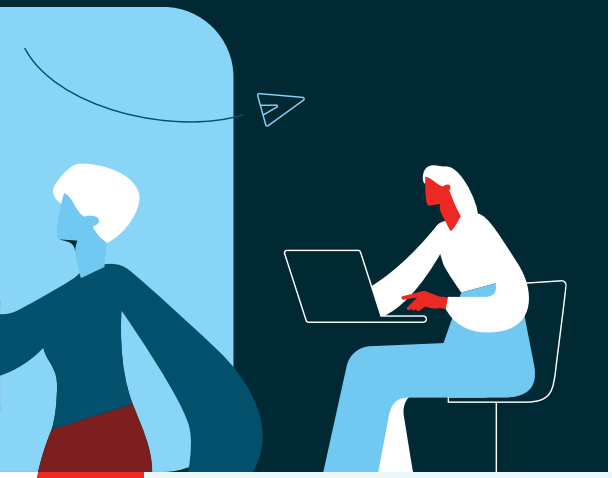


FIGURE 9: TOP CAPABILITY GAPS ACROSS AI COMPETENCIES FOR JAPANESE ORGANIZATIONS

% of organizations rating themselves as having a capability gap

2026 Tech Talent, Q25, Sample Size Japan = 80, Sample Size Rest of World = 320, DKNS excluded, capability gap = significant or minor, detailed data in appendix A4





Closing the skills gap

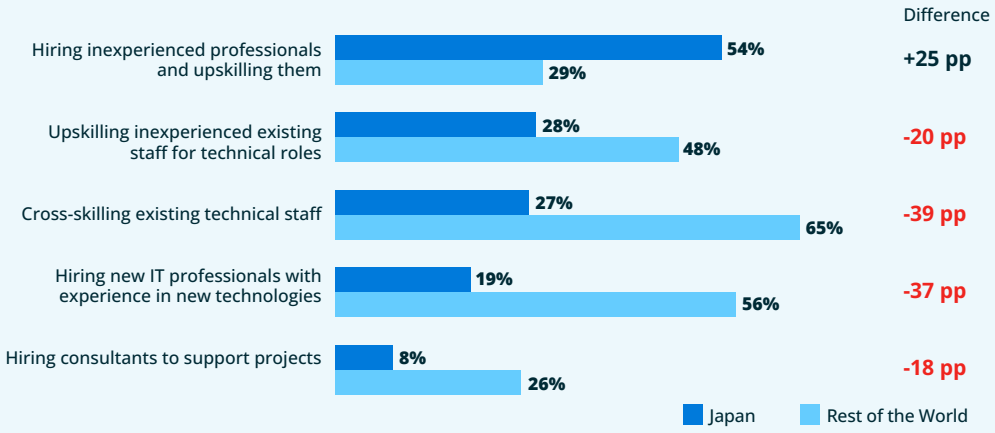
Upskilling is the preferred strategy to address the lack of a skilled workforce

Organizations have a clear preference for how to address technical talent gaps, and Japan's approach differs notably from the rest of the world. As shown in Figure 10, Japan's top strategy is hiring inexperienced professionals and upskilling them, cited by 54% of organizations, 25 percentage points above the rest of the world (29%). This preference reflects a long-standing feature of Japanese employment culture: hiring generalists into the organization, then building competencies internally over time.[15] Upskilling experienced existing staff for technical roles and cross-skilling existing technical staff follow at 28% and 27%, respectively. The preference for these strategies that involve upskilling indicate a clear preference over hiring new IT professionals with experience in new technologies (19%) or hiring consultants to support projects (8%).

FIGURE 10: UPSKILLING IS THE TOP STRATEGY TO ADDRESS TECHNICAL TALENT GAPS IN JAPAN

How does your organization ensure that its technical staff have the necessary skills to fulfill the technological needs of the organization? (select all that apply)

2026 Tech Talent, Q27, Sample Size Japan = 80, Sample Size Rest of World = 320, DKNS excluded



This upskilling preference carries particular significance in the context of AI adoption. Deploying effective AI systems requires familiarity with the business processes, data flows, and organizational context. Some of this knowledge may be tacit, embedded in the people who have worked within the organization, and it is not easily documented, transferred, or replicated by external hires. An AI system built by teams who lack that context may be technically sound but operationally misaligned. By upskilling from within, organizations keep that institutional knowledge in the loop. In this sense, Japan's preference for developing technical talent internally may prove a strategic advantage: the same workforce that understands the business is also being equipped to build and govern the AI that will run it. Consistent with this preference, 84% of organizations consider upskilling important, very important, or extremely important (Figure 11).

15 https://www.oecd.org/en/publications/artificial-intelligence-and-the-labour-market-in-japan_b825563e-en.html

FIGURE 11: UPSKILLING IS CONSIDERED IMPORTANT BY MOST JAPANESE ORGANIZATIONS

How important is upskilling as a strategy to address technical talent needs? (select one)

2026 Tech Talent, Q28, Sample Size = 80, DKNS and Hard to Say excluded, respondents from Japan only

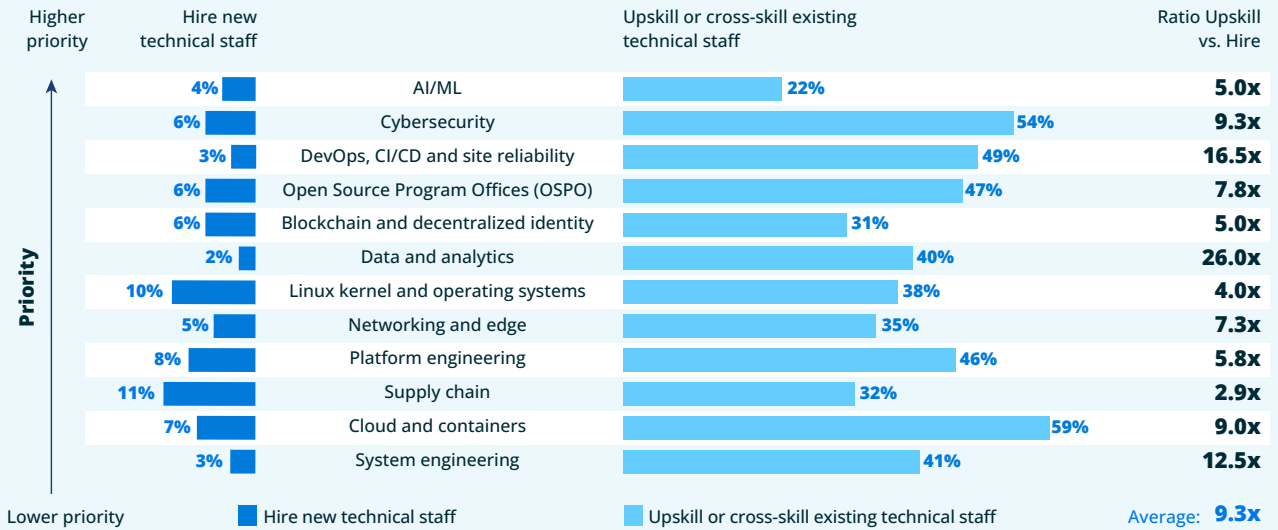
Upskilling is preferred across the technology stack

Upskilling outpaces hiring new staff, not only in AI but across all surveyed technical domains (Figure 12). The margins are widest in data and analytics (40% upskill vs. 2% hire), DevOps, CI/CD, and site reliability (49% vs. 3%), system engineering (41% vs. 3%), cybersecurity (54% vs. 6%), and cloud and containers (59% vs. 7%), precisely the infrastructure domains critical for AI deployment.

FIGURE 12: UPSKILLING BEATS HIRING ACROSS PRIORITY DOMAINS

For the following technology areas, which approach would you prioritise in 2026 to meet your organization's needs?

2026 Tech Talent, Q40, Sample Size = 80, DKNS excluded, respondents from Japan only, sorted by priority areas, only the top 12 are shown. Ratios compare upskill/cross-skill vs. hire new technical staff after excluding 'not a priority' responses. Percentages recalculated excluding 'not a priority'; consultant hiring is not shown or included in the upskill-vs-new-staff ratio. Average calculated using only the top 12 areas. Detailed data available in Appendix A5.



Organizations are on average 9.3 times more likely to upskill than to hire across priority domains. For organizations, this means that closing skills gaps increasingly depends on the effectiveness of their internal learning programs.

Upskilling vs hiring: benefits and challenges

The preference for upskilling is widespread but not without trade-offs (Figure 13). The top benefits cited by Japanese organizations are filling senior roles when headcount is hard to find (35%), boosting job satisfaction through career development (34%), and creating versatile employees who redeploy more effectively than new hires (31%). Challenges also exist: 29% of organizations report that creating an environment for continuous learning takes significant effort and time, 26% find that upskilling can be ineffective for complex roles, and 23% struggle to find appropriate training materials.

External hiring also carries distinct benefits and challenges. All three top benefits are tied at 28%: lower upfront investment in technical training, the fresh perspectives and innovative approaches that new employees can bring, and the ability to hire individuals with multiple skills who can cover several roles. Hiring also presents challenges: 29% of organizations report that hiring the wrong candidate and having to restart the process is a significant problem, 28% say that difficulty finding candidates with the right skills can delay projects, and 25% find recruitment to be costly, time-consuming, and often unsuccessful in identifying the right person.

FIGURE 13

Upskilling and hiring offer distinct trade-offs in workforce development

2026 Tech Talent Survey, Q37, Q38, Q34, Q35, Sample Size = 80, DKNS excluded, respondents from Japan only, top 3 responses displayed (labels abbreviated); complete response distributions are provided in appendices A6-A9.

When organizations compare the two approaches directly (Figure 14), upskilling is favored over hiring across all surveyed dimensions. The advantage is strongest for staff retention, where upskilling is preferred at a 9.3x ratio over hiring, and time to productivity, at 9.0x. Quality of work follows at 7.8x, with team cohesion and understanding of business context both at 6.4x. Total cost shows the smallest gap, at 3.5x, though upskilling still holds the advantage. Compared with the rest of the world, Japan's preference for upskilling is notably stronger on time to productivity (9.0x versus 1.4x globally) and quality of work (7.8x versus 2.9x), while respondents in the rest of the world prefer upskilling more strongly for understanding business context (8.2x) than Japan does (6.4x).

Our survey also suggests that the hiring cycle is much slower than upskilling and can be risky (Figure 15). Japanese organizations estimate that hiring and onboarding new technical staff takes 81% longer than upskilling existing employees, nearly double the 44% gap reported in the rest of the world. Retention risk

FIGURE 14: UPSKILLING OUTPERFORMS HIRING ACROSS KEY DIMENSIONS

How do these approaches compare in your experience?

2026 Tech Talent, Q39, Sample Japan = 80, Sample Size Rest of World = 320, DKNS excluded, difference in ratio calculations may be due to rounding, detailed data for the rest of world in Appendix A10

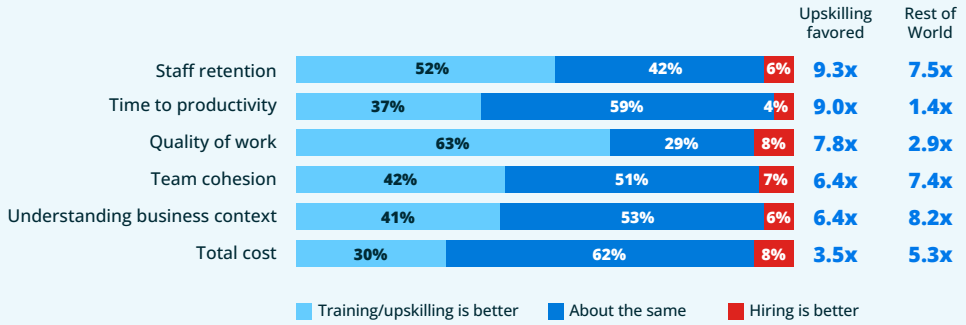


FIGURE 15

Hiring is slower and riskier than upskilling

2026 Tech Talent, Q30, Q31, Q32, Q36, Sample Size Japan = 80, Sample Size Rest of World = 320, weighted averages, detailed data available in Appendices A11-A14. Averages were estimated by assigning each response range its midpoint value, weighting those values by the share of respondents in each range, and summing the weighted values.

81%
longer than upskilling
(vs. 44% Rest of World)

46%
of new employees leave within 6 months
(vs. 23% Rest of World)

compounds the problem: 46% of new employees in Japan leave within six months, compared with 23% globally. When nearly half of new hires depart within half a year, a significant portion of the recruitment and onboarding investment is simply lost. These findings strengthen the case for building technical talent from within rather than relying primarily on external hiring.

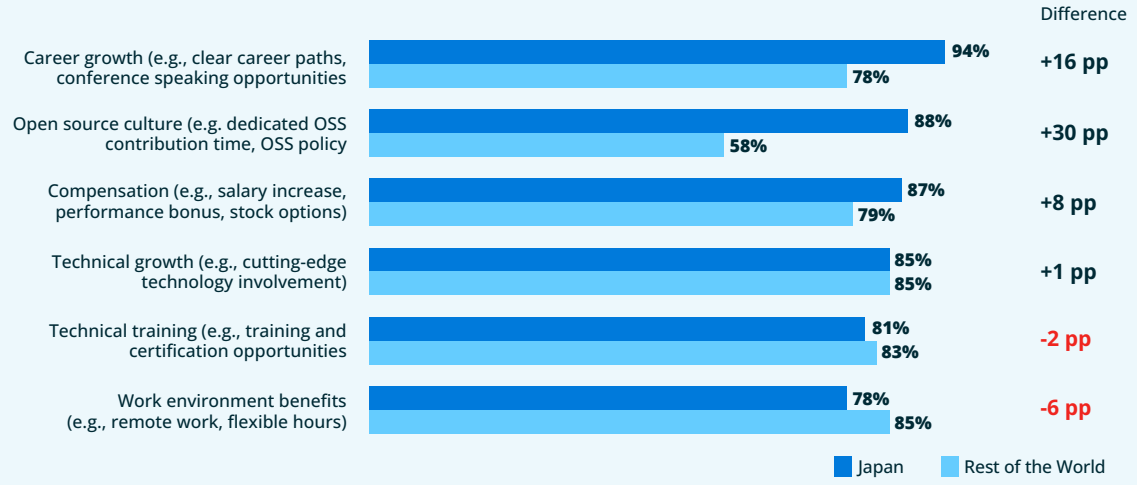
Technical talent is more likely to stay where it has room to grow

As shown in Figure 16, among the strategies Japanese organizations consider effective for retaining technical talent, career growth ranks first at 94%, 16 percentage points above the rest of the world. Open source culture, encompassing dedicated time for OSS contributions

FIGURE 16: STRATEGIES TO RETAIN TECHNICAL TALENT

% of respondents who consider each strategy effective for retaining technical staff

2026 Tech Talent, Q29, Sample Size Japan = 80, Sample Size Rest of World = 320, excluding DKNS, Effectiveness = % rating strategy as very effective or somewhat effective among those who use it, detailed data in Appendix A15.1 and A15.2



and a clear OSS policy, ranks second at 88%, the largest positive gap versus the rest of the world at +30 percentage points. Compensation at 87%, technical growth at 85%, and technical training at 81% follow closely. Work environment benefits, such as remote work and flexible hours, rank last among Japanese respondents at 78%.

These results suggest that organizations see learning and development as at least as effective as work environment benefits for retention. Organizations that invest in continuous development are therefore not only closing skills gaps but also creating the conditions that encourage skilled professionals to stay.

The factors organizations value most in technical assessments favor internal candidates

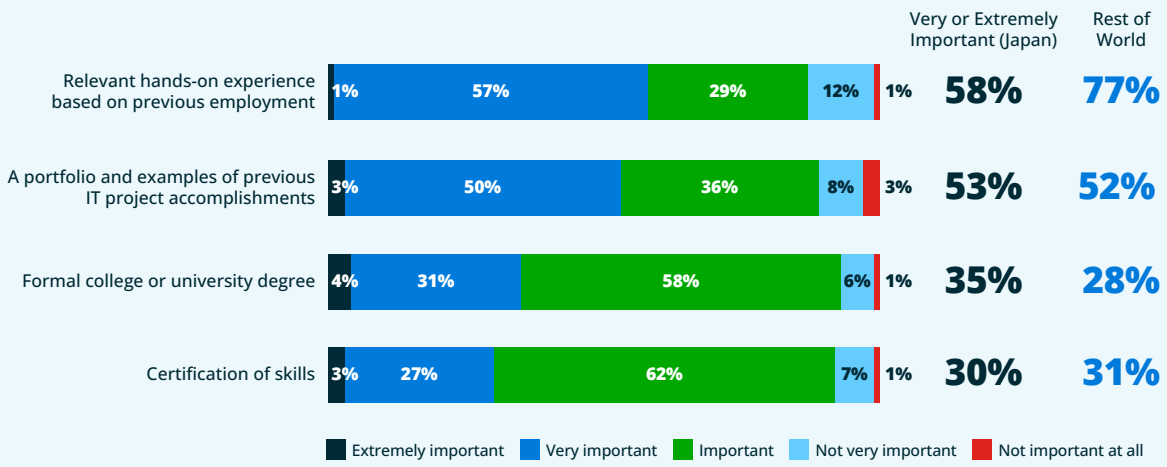
When assessing candidates' skills for a technical position, relevant hands-on experience from prior employment ranks first, with 58% of Japanese organizations rating it very or extremely important (Figure 17). A portfolio and examples of IT project accomplishments rank second at 53%. Both criteria may favor candidates whose work the organization can directly observe, including internal candidates. Organizations have direct visibility into existing employees' work, including how they have performed under real conditions, which systems they have worked on, and how they handle unfamiliar technical challenges. That evidence is difficult to infer from a resume or reconstruct through an interview process.

Formal college or university degrees (35%) and skills certifications (30%) trail the top two criteria. Japan's emphasis on formal degrees exceeds the rest of the world by 7 percentage points. Notably, certifications rank below degrees in Japan, in contrast to the rest of the world. For organizations running upskilling programs, certifications still offer a structured path for closing defined skills gaps, and their broad recognition means they carry weight in both internal assessments and retention strategies.

FIGURE 17: IMPORTANCE OF FACTORS USED TO ASSESS CANDIDATES' TECHNICAL SKILLS

How important are the following education and experience factors when assessing a candidate's technical skills?

2026 Tech Talent, Q33, Sample Size = 80, DKNS excluded, respondents from Japan only, number on the right is the aggregation of very important and extremely important, details for the rest of the world at Appendix A16



Conclusion

Findings from the 2026 State of Tech Talent Japan Report suggest that a significant challenge facing Japan's talent market is a skills crisis driven by technological demands, not a shortage of job opportunities. Survey respondents report a strongly positive net hiring effect due to AI: +49% in 2025, +54% in 2026, and +35% in 2027, well above the rest of the world. At the role level, net hiring effects are positive across all technical positions, with software development (+56%), AI-specific roles (+48%), and entry-level positions (+46%) leading the way. Japan's positive entry-level hiring effect differs considerably from the rest of the world, where entry-level hiring showed a negative net effect (−2%).

The findings also point to a full-stack readiness problem, with organizations needing capabilities that extend beyond AI implementation alone, including AI operations and monitoring (52%) and AI security and risk management (49%). Dedicated AI and ML headcount exists in only 13% of Japanese organizations, compared with 53% globally, a 40-percentage-point gap. DevOps, CI/CD, and site reliability show an even wider gap (18% versus 68%). Infrastructure readiness also lags: Kubernetes and container orchestration, critical for scaling AI workloads in production, have been deployed by only 57% of Japanese organizations, compared with 72% worldwide. Japanese organizations cite a lack of infrastructure skills as their leading barrier (29%), while the top barrier for the rest of the world is security concerns (48%).

To bridge the skills gaps, organizations strongly prefer internal development. Upskilling existing staff is favored over external hiring by a ratio of 9.3x, a ratio notably higher than in the rest of the world. This preference may be partially explained by the cost of hiring and onboarding new technical staff, which takes an estimated 81% longer than upskilling existing employees, nearly double the 44% gap reported globally, and 46% of new hires depart within six months, compared with 23% worldwide. Retention data further reinforce the case for building talent from within: technical professionals are more likely to stay in organizations where they have opportunities to grow, with technical training and growth opportunities ranking higher than work environment benefits in retention effectiveness. Open source culture (88%) ranked higher than compensation (87%) in terms of effectiveness for retaining technical talent.

Actionable takeaways

To help both organizations and professionals bridge critical capability gaps, we have synthesized the core insights of our research into definitive roadmaps for success. Based on the findings from the Tech Talent Japan Report, our recommendations for hiring managers and talent leaders include the following:

- Invest in internal talent development and upskilling to preserve institutional knowledge, accelerate time to productivity, and reduce the costs and risks of external hiring.
- Build structured upskilling programs that account for the full stack, not AI specialization alone, prioritizing the infrastructure, DevOps, and cybersecurity domains where Japan faces its widest headcount and capability gaps.
- Create a continuous learning environment to enhance the effectiveness of upskilling and improve employee retention.
- Foster an open source culture, including dedicated time for OSS contributions and a clear OSS policy, which ranks second among retention strategies, above compensation.

For those seeking technical roles, recommendations include:

- Focus on full-stack skills that support the operationalization of AI, with particular attention to AI operations and monitoring and cybersecurity and risk management, the domains where Japanese organizations report their widest capability gaps.
- Build a strong portfolio and document hands-on project experience, which are the top two criteria Japanese organizations use to assess technical candidates.
- Look beyond AI-specific roles. Net hiring effects are also strongly positive across software development positions (+56%), IT operations (+44%), technical management (+42%), and QA and testing (+41%).

Methodology and demographics

About the survey

This study is based on an online survey conducted by Linux Foundation Research in February 2026. The survey aimed to understand trends in technical hiring and the effects of AI-related disruption on the workforce. We broadly advertised the survey to Linux Foundation subscribers, members, partner communities, and social media. To mitigate sampling biases, we also hired a panel provider. We addressed data quality through extensive prescreening, survey screening questions, consistency checks, and data quality review to ensure that respondents had sufficient professional experience to answer questions accurately on behalf of their organization. We only considered complete responses to the survey. After data quality filtering and removal of two respondents who did not identify their region, our final sample comprised 400 responses: 80 from Japan (the focus of this report) and 320 from the rest of the world.

The survey comprised 40 questions covering screening, respondent demographics, AI's impact on organizations, and approaches to addressing talent management needs. The dataset driving the analysis in this report and survey frequencies can be found on Data.World (see below).

The target audience included respondents who met the following criteria: (i) must be responsible for hiring, recruiting, or training information technology (IT) professionals; (ii) must pass an attention check question; and (iii) must be currently employed by an organization.

A total of 1,077 respondents began the survey, and 530 completed it. After screening and filtering, the final analyzed dataset comprised 400 responses. For the rest-of-world subsample of 320 respondents, the approximate margin of error is about ±4.6% at 90% confidence and ±5.5% at 95% confidence. For the Japan subsample of 80 respondents, the approximate margin of error is about ±9.2% at 90% confidence and ±11% at 95% confidence.

Although respondents were required to answer nearly all questions in the survey, a provision was made when a respondent was unable to answer a question. This was accomplished by adding a "Don't know or not sure" (DKNS) response to the list of responses for every question. However, this creates a variety of analytical challenges. One approach was to treat a DKNS just like any other response, so that the percentage of respondents who answered the DKNS is known. This approach has the advantage of showing the exact distribution of the data collected. The challenge with this approach is that it can distort the distribution of valid responses, i.e., responses

where respondents could answer the question. Therefore, most of the analyses in this report exclude DKNS responses. This approach assumes that DKNS responses are missing at random or missing completely at random. Excluding DKNS responses does not change the raw counts for the remaining response options, but it does change the denominator and therefore increases their reported percentages proportionally. This has the effect of proportionally increasing the percentage values of the remaining responses. Where we have elected to exclude DKNS data, the figure note states this explicitly.

The percentage values in this report may not total exactly 100% due to rounding. Values in the appendices and aggregations presented in figures may also differ due to rounding.

Data.World access

LF Research makes each of its empirical project datasets available on Data.World (**https://data.world/thelinuxfoundation**). Included in this dataset are the survey instrument, raw survey data, screening and filtering criteria, and frequency charts for each question in the survey. Access to Linux Foundation datasets is free but does require you to create a data.world account.

Respondent demographics

Figure 18 presents the demographics of the Japanese respondents. Respondents are evenly split between those who train or hire technical staff for their team or department (44%) and internal HR or talent managers (44%), with internal recruiters making up the remaining 11%. The majority (79%) are employed full-time. Professionally, they are concentrated in IT development director roles (20%), systems operations (16%), IT operations director (16%), software delivery (15%), and OSPO team members (11%). Respondents work across a variety of industries, with construction and engineering and education each accounting for 18%, followed by business services (15%) and consumer packaged goods (13%), and IT at 11%. Japan's respondents are heavily concentrated in larger organizations: 54% work in companies with 1,000 to 4,999 employees, and 33% in organizations with 5,000 or more employees, leaving only 12% in organizations with fewer than 1,000 employees. Most respondents work for companies whose primary revenue comes from industry-specific products or services (59%), while 41% work for IT-focused organizations. This concentration in larger, non-IT organizations should be considered when interpreting results.

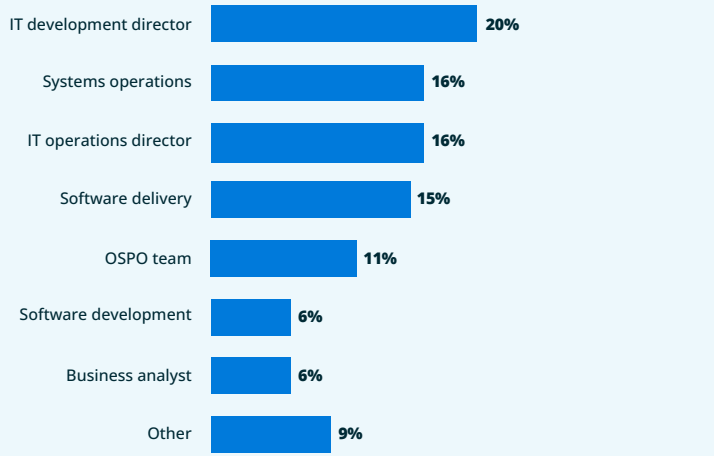
FIGURE 18: RESPONDENT DEMOGRAPHICS

What best describes your role in training or hiring IT professionals?

2026 Tech Talent, Q2, n=80, responses from Japan only

Professionally, which role or field do you most closely identify with?

2026 Tech Talent, Q7, n=80, responses from Japan only

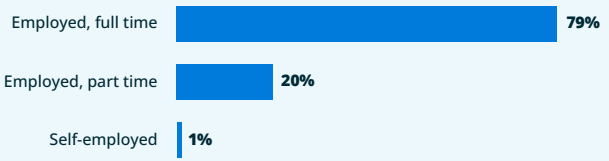


Which option best describes the company or entity you work for?

2026 Tech Talent, Q9, n=80, responses from Japan only

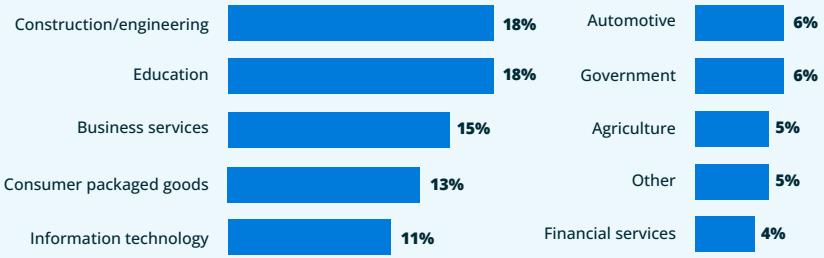
What is your current employment status?

2026 Tech Talent, Q5, n=80, responses from Japan only



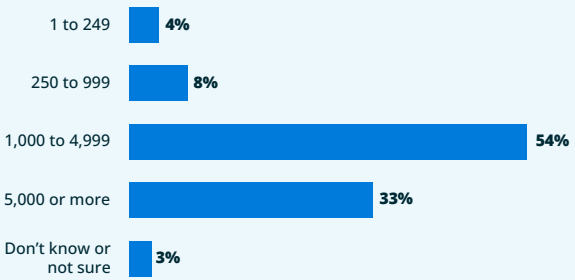
Which of the following best describes your company's or entity's primary industry?

2026 Tech Talent, Q8, n=80, responses from Japan only



Please estimate how many total employees are in the company or entity you work for.

2026 Tech Talent, Q13, n=80, responses from Japan only

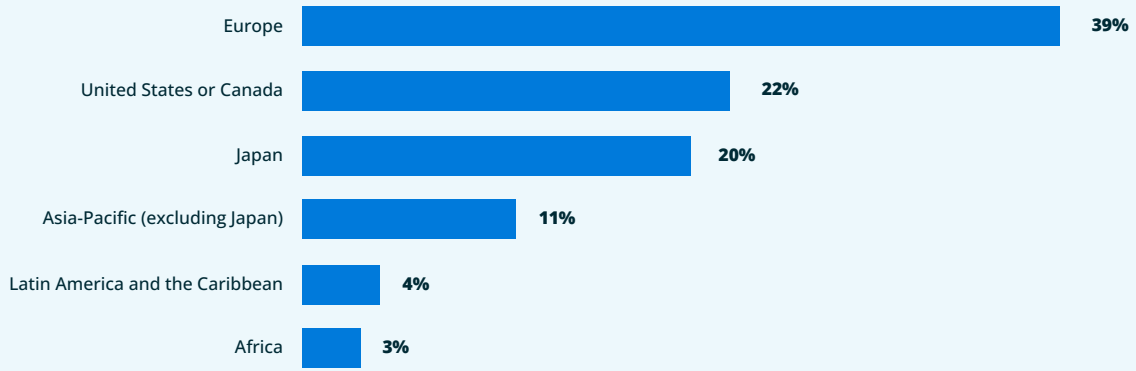


As observed in Figure 19, in terms of geographical distribution, the full sample of 400 respondents is led by Europe (39%), followed by the United States or Canada (22%), Japan (20%), Asia-Pacific excluding Japan (11%), Latin America and the Caribbean (4%), and Africa (3%).

FIGURE 19: GEOGRAPHICAL DISTRIBUTION OF RESPONDENTS

In what country or region does your organization have its headquarters? (select one)

2026 Tech Talent, Q8, Sample Size = 400



Some demographics have been regrouped to facilitate a more insightful analysis. For the original source data and study frequencies, please see the data.world dataset and access as described above.

Appendix

Appendix A1.1

2026 Tech Talent, Q22, Respondents from Japan, Sample Size = 80, not applicable and DKNS excluded.

HOW HAS AI IMPACTED YOUR TECHNICAL WORKFORCE IN THE FOLLOWING AREAS DURING 2025? (Q22)	DECREASE	NO CHANGE	INCREASE
Software development positions	4%	35%	60%
QA/testing positions	6%	48%	46%
Entry-level technical positions	6%	43%	51%
IT operations staff	4%	47%	49%
Technical management roles	5%	48%	47%
AI-specific roles	3%	47%	51%

Appendix A1.2

2026 Tech Talent, Q22, Respondents from the rest of the world, Sample Size = 320, not applicable and DKNS excluded.

HOW HAS AI IMPACTED YOUR TECHNICAL WORKFORCE IN THE FOLLOWING AREAS DURING 2025? (Q22)	DECREASE	NO CHANGE	INCREASE
Software development positions	14%	50%	35%
QA/testing positions	19%	52%	29%
Entry-level technical positions	26%	50%	24%
IT operations staff	13%	63%	23%
Technical management roles	9%	66%	25%
AI-specific roles	3%	30%	67%

Appendix A2.1

2026 Tech Talent, Q20, Respondents from Japan, Sample Size = 80, Not Applicable and DKNS excluded.

WHAT PROGRESS HAS YOUR ORGANIZATION MADE IN IMPLEMENTING EACH LAYER OF THE PARK STACK? (Q20)	NOT STARTED	PLANNING	IN PROGRESS	PARTIALLY DEPLOYED	FULLY DEPLOYED
High-level framework such as PyTorch for model development or refinement	3%	1%	27%	49%	20%
AI foundation models that can be tuned, customized, and deployed	3%	10%	21%	56%	10%
Distributed compute engineering such as Ray for scaling applications and handling systems challenges	6%	6%	43%	32%	14%
Container orchestration such as Kubernetes for provisioning resources	3%	4%	36%	36%	20%

Appendix A2.2

2026 Tech Talent, Q20, Respondents from the rest of the world, Sample Size = 320, Not Applicable and DKNS excluded.

WHAT PROGRESS HAS YOUR ORGANIZATION MADE IN IMPLEMENTING EACH LAYER OF THE PARK STACK? (Q20)	NOT STARTED	PLANNING	IN PROGRESS	PARTIALLY DEPLOYED	FULLY DEPLOYED
High-level framework such as PyTorch for model development or refinement	27%	11%	16%	24%	23%
AI foundation models that can be tuned, customized, and deployed	10%	15%	25%	30%	19%
Distributed compute engineering such as Ray for scaling applications and handling systems challenges	37%	13%	21%	16%	14%
Container orchestration such as Kubernetes for provisioning resources	5%	6%	16%	24%	48%

Appendix A3

2026 Tech Talent, Q15, Sample Japan Size = 80, Sample Size Rest of World = 320, DKNS excluded.

WHICH OF THE FOLLOWING TECHNOLOGY AREAS ARE STAFFED BY TECHNICAL HEADCOUNT IN YOUR ORGANIZATION? (SELECT ALL THAT APPLY) (Q15)	JAPAN	REST OF WORLD	WHICH OF THE FOLLOWING TECHNOLOGY AREAS ARE STAFFED BY TECHNICAL HEADCOUNT IN YOUR ORGANIZATION? (SELECT ALL THAT APPLY) (Q15)	JAPAN	REST OF WORLD
Cloud and containers	44%	71%	Open Source Program Offices (OSPO)	6%	8%
Cybersecurity	26%	62%	Platform engineering	6%	43%
Networking and edge	24%	42%	Quantum computing	5%	5%
Blockchain and decentralized identity	23%	10%	Web & Application Development	5%	52%
Data and analytics	21%	51%	Supply chain	4%	14%
Linux kernel and operating systems	20%	32%	System engineering	4%	44%
DevOps, CI/CD and site reliability	18%	68%	System administration	3%	47%
AI/ML	13%	53%	Safety-critical systems	1%	10%
IoT and embedded	11%	20%	Visual effects, augmented/virtual reality	0%	6%
Open hardware	10%	7%	Other (please specify)	0%	2%
Open source and compliance best practices	9%	19%			

Appendix A4

2026 Tech Talent, Q25, Respondents from Japan, Sample Size = 80, excluding Not Applicable

RATE YOUR ORGANIZATION'S CURRENT CAPABILITY IN THESE AREAS FOR AI SUCCESS: (Q25)	SIGNIFICANT GAP	MINOR GAP	ADEQUATE	STRONG CAPABILITY
AI operations and monitoring	7%	45%	32%	16%
AI security and risk management	4%	45%	41%	11%
Business domain expertise	7%	32%	49%	12%
Cost optimization for AI workloads	5%	30%	51%	13%
Change management and communication	7%	27%	56%	11%
Expertise to build/manage AI infrastructure	0%	29%	60%	11%
Data management	0%	28%	57%	15%
Infrastructure and platform capabilities (Kubernetes, cloud-native systems)	4%	19%	70%	7%

Appendix A5

2026 Tech Talent, Q40, Respondents from Japan, Sample Size = 80, DKNS excluded. Sorted by priority areas. The numbers in the first three columns were recalculated excluding the "not a priority" responses.

FOR THE FOLLOWING TECHNOLOGY AREAS, WHICH APPROACH WOULD YOU PRIORITIZE IN 2026 TO MEET YOUR ORGANIZATION'S NEEDS? (Q40)	UPSKILL OR CROSS-SKILL EXISTING TECHNICAL STAFF	HIRE NEW TECHNICAL STAFF	HIRE CONSULTANTS	NOT A PRIORITY
AI/ML	22%	4%	74%	12%
Cybersecurity	54%	6%	41%	13%
DevOps, CI/CD and site reliability	49%	3%	48%	15%
Open Source Program Offices (OSPO)	47%	6%	47%	15%
Blockchain and decentralized identity	31%	6%	63%	16%
Data and analytics	40%	2%	58%	17%
Linux kernel and operating systems	38%	10%	52%	21%
Networking and edge	35%	5%	60%	21%
Platform engineering	46%	8%	46%	21%
Supply chain	32%	11%	57%	21%
Cloud and containers	59%	7%	34%	23%
System engineering	41%	3%	56%	23%
IoT and embedded	46%	5%	49%	25%
Safety-critical systems	43%	7%	50%	25%
Open source and compliance best practices	34%	7%	59%	25%
System administration	36%	5%	59%	25%
Open hardware	36%	2%	63%	31%
Visual effects, augmented/virtual reality	44%	3%	53%	31%
Quantum computing	41%	5%	53%	31%

Appendix A6

2026 Tech Talent, Q37, Respondents from Japan, Sample Size = 80, DKNS excluded

WHAT ARE THE MAIN BENEFITS TO UPSKILLING OR CROSS-SKILLING STAFF? (SELECT ALL THAT APPLY) (Q37)	%
Serves as an effective strategy for filling senior positions when technical headcount is difficult to find	35%
Presents career development opportunities to staff members, potentially leading to higher job satisfaction	34%
Produces employees with varied skillsets who can be redeployed more effectively than new hires	31%
A more cost-effective approach to increasing technical expertise compared to hiring new employees	18%
Provides an ideal pathway for junior technical staff to expand their capabilities	16%
Brings people into roles who already possess familiarity with and have relationships with the company	15%
Works best when learning narrowly focused skills	8%
Our organization sees no benefits to upskilling	0%
Other (please specify)	0%

Appendix A7

2026 Tech Talent, Q38, Respondents from Japan, Sample Size = 80, DKNS excluded

WHAT ARE THE MAIN CHALLENGES TO UPSKILLING OR CROSS-SKILLING STAFF? (SELECT ALL THAT APPLY) (Q38)	%
Creating and nurturing an environment for continuous learning takes effort and time	29%
Upskilling takes time and can be ineffective at training for complex roles	26%
Finding the appropriate training materials is a challenge	23%
Upskilling staff doesn't help us to fill new positions because we still have to backfill for the positions vacated	20%
Resources are pulled away from other priority areas	16%
Upskilling doesn't work for senior roles because you can't teach broad subject matter expertise	15%
It can be difficult to translate new knowledge into practical applications	14%
Our organization has not experienced any challenges to upskilling	1%
Other (please specify)	0%

Appendix A8

2026 Tech Talent, Q34, Respondents from Japan, Sample Size = 80, DKNS excluded

WHAT ARE THE MAIN BENEFITS OF HIRING TECHNICAL STAFF? (SELECT ALL THAT APPLY) (Q34)	%
Little or no investment needed in their technical training	28%
New technical employees can bring fresh perspectives and innovative approaches	28%
Hiring individuals with multiple skills can cover multiple roles	28%
Increasing overall staff headcount means additional, instead of reallocated resources	25%
The candidate already has the skills required for the role	23%
Skill gaps can be addressed with precision	20%
Access to a wider talent pool	19%
Our organization sees no benefits to hiring	0%
Other (please specify)	0%

Appendix A9

2026 Tech Talent, Q35, Respondents from Japan, Sample Size = 80, DKNS excluded

WHAT ARE THE MAIN CHALLENGES TO HIRING FOR TECHNICAL STAFF? (SELECT ALL THAT APPLY) (Q35)	%
Hiring the wrong candidate and then having to onboard again is an issue	29%
Problems in finding the candidate with the right skills can delay projects	28%
Recruitment is costly, time consuming, and often does not lead to the right candidate for the position	25%
There is not a streamlined way to recruit new technical staff with proven skills	25%
Not all tech talent is the same – it's challenging that they do not have a common benchmark of skills, methodologies	23%
Onboarding takes valuable internal resources away from other critical projects and is time consuming	21%
Verifying claimed technical skills	11%
Our organization has not experienced any challenges to hiring	0%
Other (please specify)	0%

Appendix A10

2026 Tech Talent, Q39, Respondents from the rest of the world, Sample Size = 320, excluding DKNS.

HOW DO THESE APPROACHES COMPARE IN YOUR EXPERIENCE? (Q39)	HIRING IS BETTER	ABOUT THE SAME	UPSKILLING IS BETTER
Time to productivity	29%	29%	42%
Total cost	10%	36%	54%
Quality of work	16%	38%	46%
Staff retention	9%	27%	64%
Team cohesion	8%	29%	63%
Understanding business context	8%	25%	67%

Appendix A11

2026 Tech Talent, Q30, Sample Size Japan = 80, Sample Size Rest of World = 320.

ON AVERAGE, HOW LONG DOES IT TAKE TO HIRE A HEADCOUNT TO FILL AN OPEN TECHNICAL POSITION IN YOUR ORGANIZATION? (SELECT ONE) (Q30)	JAPAN	REST OF WORLD
Less than a month	1%	6%
1 to 3 months	15%	38%
4 to 6 months	18%	32%
7 to 9 months	38%	12%
10 to 12 months	21%	4%
More than 12 months	1%	2%
Don’t know or not sure	1%	6%

Appendix A12

2026 Tech Talent, Q31, Sample Size Japan = 80, Sample Size Rest of World = 320.

HOW LONG DOES THE ONBOARDING PROCESS TAKE FOR A NEW TECHNICAL HEADCOUNT TO REACH NORMAL PRODUCTIVITY? (SELECT ONE) (Q31)	JAPAN	REST OF WORLD
Up to 1 month	3%	16%
1 to 3 months	16%	42%
4 to 6 months	59%	30%
7 to 12 months	16%	8%
More than 12 months	0%	1%
Don’t know or not sure	6%	3%

Appendix A13

2026 Tech Talent, Q36, Sample Size Japan = 80, Sample Size Rest of World = 320.

ON AVERAGE, HOW LONG DOES IT TAKE TO UPSKILL OR CROSS-SKILL AN EXISTING EMPLOYEE TO REACH NORMAL PRODUCTIVITY IN A NEW TECHNICAL ROLE? (SELECT ONE) (Q36)	JAPAN	REST OF WORLD
Less than a month	1%	2%
1 to 3 months	4%	31%
4 to 6 months	43%	37%
7 to 9 months	38%	14%
10 to 12 months	9%	7%
More than 12 months	0%	5%
Don't know or not sure	5%	4%

Appendix A14

2026 Tech Talent, Q32, Sample Size Japan = 80, Sample Size Rest of World = 320.

ON AVERAGE, WHAT PERCENTAGE OF NEW TECHNICAL STAFF HIRES RESIGN OR WERE ASKED TO LEAVE WITHIN 6 MONTHS OF BEING ONBOARDED? (SELECT ONE) (Q32)	JAPAN	REST OF WORLD
0–20%	8%	55%
21–40%	25%	16%
41–60%	43%	13%
61–80%	23%	4%
81–100%	0%	1%
Don't know or not sure	3%	12%

Appendix A15.1

2026 Tech Talent, Q29, Respondents from Japan, Sample Size = 80, DKNS excluded.

WHAT STRATEGIES DOES YOUR ORGANIZATION EMPLOY TO RETAIN TECHNICAL TALENT? RATE THE EFFECTIVENESS OF EACH: (Q29)	NOT EFFECTIVE	SOMEWHAT EFFECTIVE	VERY EFFECTIVE	NOT OFFERED
Compensation (e.g., salary increase, performance bonus, stock options)	0%	25%	62%	13%
Career growth (e.g., clear career paths, conference speaking opportunities)	1%	30%	65%	4%
Open source culture (e.g., dedicated OSS contribution time, OSS policy)	0%	49%	39%	12%
Work environment benefits (e.g., remote work, flexible hours)	5%	48%	30%	16%
Technical training (e.g., training and certification opportunities)	3%	27%	54%	16%
Technical growth (e.g., cutting-edge technology involvement)	1%	25%	60%	13%

Appendix A15.2

2026 Tech Talent, Q29, Respondents from Rest of World, Sample Size = 320, DKNS excluded.

WHAT STRATEGIES DOES YOUR ORGANIZATION EMPLOY TO RETAIN TECHNICAL TALENT? RATE THE EFFECTIVENESS OF EACH: (Q29)	NOT EFFECTIVE	SOMEWHAT EFFECTIVE	VERY EFFECTIVE	NOT OFFERED
Compensation (e.g., salary increase, performance bonus, stock options)	10%	42%	37%	11%
Career growth (e.g., clear career paths, conference speaking opportunities)	10%	38%	40%	12%
Open source culture (e.g., dedicated OSS contribution time, OSS policy)	19%	30%	28%	23%
Work environment benefits (e.g., remote work, flexible hours)	6%	29%	55%	9%
Technical training (e.g., training and certification opportunities)	7%	43%	41%	10%
Technical growth (e.g., cutting-edge technology involvement)	6%	40%	45%	9%

Appendix A16

2026 Tech Talent, Q33, Respondents from Rest of World, Sample Size = 320, DKNS excluded.

HOW IMPORTANT ARE THE FOLLOWING EDUCATION AND EXPERIENCE FACTORS WHEN ASSESSING A CANDIDATE'S TECHNICAL SKILLS? (Q33)	NOT IMPORTANT AT ALL	NOT VERY IMPORTANT	IMPORTANT	VERY IMPORTANT	EXTREMELY IMPORTANT
Formal college or university degree	8%	23%	42%	16%	11%
Certification of skills	6%	21%	41%	23%	8%
Relevant hands-on experience based on previous employment	1%	5%	17%	44%	33%
A portfolio and examples of previous IT project accomplishment	1%	13%	34%	36%	16%

About the authors

MARCO GEROSA is a full professor of Computer Science at Northern Arizona University and a research analyst at LF Research. His research on software engineering and open source software has resulted in over 300 publications in top-tier venues. Dr Gerosa has a PhD, a master's in Informatics, and a B.S. in Computer Engineering. He is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE) and the Association for Computing Machinery (ACM). He supervised several PhD and MSc students who are now researchers in top institutions. He also has more than 20 years of teaching experience. For more information, visit http://www.marcoagerosa.com.

ADRIENN LAWSON serves as Director of Quantitative Research at the Linux Foundation, where she leads data-driven initiatives to understand open source ecosystems. With expertise in social data science from the University of Oxford and a background spanning academic and governmental research, she brings methodological rigour to analysing distributed collaboration networks. At the Linux Foundation, Adrienn leads a team conducting cross-sectional research across industry verticals and geographic regions to provide comprehensive insights into open source dynamics. Her work encompasses empirical investigations into regulatory compliance, the implications of AI, and sustainable funding models. She produces evidence-based recommendations that inform strategic decision-making within the open source community.

Acknowledgments

Thanks to everyone who participated in the survey and supported its distribution. Special thanks to Linux Foundation colleagues and community members for their involvement in the various stages of the research process: Hilary Carter, Mia Chaszeyka, Noriaki Fukuyasu, Anna Hermansen, Noriko Otake, Scott Punk, Mieko Sato, Clyde Seepersad, Mary Simpkins, and the LF Creative Services team.

LF Research uses generative AI tooling in varying degrees for research-related tasks including aggregating secondary sources, analyzing data, supporting report drafting, copyediting, and translation. All AI-generated content is reviewed and revised as needed.

x.com/linuxfoundation

facebook.com/TheLinuxFoundation

linkedin.com/company/the-linux-foundation

youtube.com/user/TheLinuxFoundation

github.com/LF-Engineering

July 2026

To reference this work, please cite as follows: Marco Gerosa and Adrienn Lawson, "2026 State of Tech Talent Japan Report: Expanding Headcount and Closing the Skills Gap to Modernize Japan's Infrastructure," foreword by Noriaki Fukuyasu, The Linux Foundation, July 2026.

THE LINUX FOUNDATION | Research

Founded in 2021, Linux Foundation Research explores the growing scale of open source collaboration, providing insight into emerging technology trends, best practices, and the global impact of open source projects. By leveraging project databases and networks and committing to best practices in quantitative and qualitative methodologies, Linux Foundation Research is creating the go-to library for open source insights for the benefit of organizations worldwide.

THE LINUX FOUNDATION | Education

Linux Foundation Education builds the certifications and skills that power the technologies the world runs on. As the training and certification arm of the Linux Foundation, it is uniquely positioned at the source of innovation, working directly with the maintainers, projects, and communities shaping modern infrastructure. Its vendor-neutral certifications set the standard for proving real-world capability, while its training helps individuals build the skills to earn them. Together, they enable professionals to grow credible, portable careers and help organizations develop teams that can adopt, scale, and secure critical technologies across cloud, AI, and emerging domains.