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2025

State of Tech Talent Japan Report

Trends in Technical Hiring, AI Disruption, and the Skills Gap

June 2025

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2025 State of Tech Talent Japan Report

Only **34%** of the workloads in Japanese organizations run in public clouds, which is below other regions, but **45%** of organizations plan to increase adoption.

Talent gaps exist across Japanese organizations, with more than **70%** of organizations understaffed in key areas such as cloud, compared to **47%** in other regions.

As in other regions, most organizations (**85%**) report that AI is reshaping their technical work, requiring upskilling of the existing workforce.

97% of organizations expect that AI will provide significant value in key strategic areas, increasing the need for a skilled workforce.

2.1x more organizations have **expanded** rather than reduced their workforce due to AI, intensifying the talent shortage.

#1 The top challenge in adopting new technologies in Japan is the lack of a skilled workforce, which impacts organizations' intent to increase public cloud & AI adoption.

Organizations are **2.8x** more likely to invest in developing existing talent than recruiting externally, recognizing their team's untapped potential.

The hiring-and-onboarding cycle takes **124%** longer than upskilling the existing workforce in Japan, compared to 59% in other regions, translating to slower innovation & market response.

With **28% of new hires departing** within 6 months, compared to 19% in other regions, organizations face substantial **sunk costs** in recruitment & onboarding.

95% of organizations recognize technical training as an effective approach for retaining talent.

94% of organizations recognize upskilling as a strategic priority.

86% of organizations consider certifications important when recruiting new talent.

Contents

Foreword

The 2025 State of Tech Talent Japan Report provides a critical lens through which to examine the evolving dynamics of technology adoption and talent development in Japan. This report provides an overview of technological trends alongside a detailed analysis of how Japan stands in comparison to global benchmarks.

As outlined within these pages, we see Japan embarking on a significant digital transformation journey. While the intention to modernize is clear, with a projected 41% increase in cloud adoption, the report highlights a striking disparity. Currently, only 34% of workloads in Japanese organizations reside in public clouds, a figure notably lower than the 43% in North America/Europe and 37% in the rest of Asia-Pacific. Furthermore, only 45% of Japanese organizations plan to increase their cloud adoption, compared to 54% in other regions. This data reveals a distinct gap that requires urgent attention if Japan aims to remain competitive on a global scale.

In the realm of AI, the report brings both encouragement and concern. While 97% of Japanese organizations expect AI to provide significant strategic value and a positive net hiring effect is projected through 2026, the reality of talent shortages poses a serious challenge. Japan reports a 70% understaffing in key areas such as cloud, compared to just 47% in other global regions, marking a 52% higher understaffing rate. Additionally, even the most common AI skills are present in less than 40% of Japanese organizations. This deficit stands in stark contrast to other leading economies, where AI skills are more readily available.

This report makes it clear that Japan's challenges are not from a lack of vision or desire to innovate, but from a significant talent gap hindering the adoption and effective utilization of cutting-edge technologies. Addressing this disparity requires a strategic and deliberate focus on upskilling the existing workforce. Indeed, Japanese organizations are recognizing this necessity, showing a strong preference for upskilling over external hiring. However, swift and substantial investment in talent development is imperative to bridge the gap with other leading tech regions and ensure Japan's competitiveness on the global stage.

We trust that this report serves as an essential resource for organizations and policymakers alike, providing the insights needed to chart a successful path forward for Japan's tech industry.

Noriaki Fukuyasu
The Linux Foundation

Executive summary

While organizations are rapidly modernizing their computing infrastructure with a projected 41% increase in cloud adoption, Japan notably lags behind other regions in both infrastructure modernization and technical staffing levels. Contrary to widespread assumptions about AI reducing workforce demand, our research shows a consistently positive net hiring effect through 2026, though this is accompanied by a concerning decline in entry-level positions that could disrupt traditional career development pathways.

The shortage of skilled professionals emerges as the dominant barrier to modernization in Japan, with more than 70% of organizations reporting being understaffed across key technological areas. This percentage is 52% higher in Japan than in other regions. This challenge is particularly acute in AI-related capabilities, where even the most common AI skills are present in less than 40% of organizations, creating significant barriers to effective AI implementation and scaling. The scarcity of advanced AI capabilities suggests that many organizations are confined to standardized solutions, potentially missing opportunities for competitive differentiation.

In response to these challenges, organizations are increasingly turning to upskilling as their primary workforce development strategy, with 94% viewing upskilling as strategically important. Upskilling takes 124% less time than hiring and onboarding new employees. The success of technical growth initiatives (98% effectiveness) and training and certification opportunities (95% effectiveness) in employee retention further validates this strategic focus on internal talent development. As technology continues to evolve at an accelerating pace, organizations that can effectively develop and retain their existing talent while strategically incorporating new expertise will be best positioned to thrive in an increasingly complex technical scenario.

Introduction

This report provides an analysis of the IT workforce and talent management strategies in the era of artificial intelligence (AI). Our insights draw on survey responses from 556 global participants responsible for hiring, training, and managing technical talent. The analysis particularly emphasizes data from Japanese organizations, complemented by comparative perspectives from the global respondents. The research explores how organizations navigate the intersection of talent management and technological innovation, specifically examining AI's transformative impact on workforce dynamics.

The report is structured around three main themes: **the growing demand for IT talent, the shortage of skilled professionals, and the role of upskilling to fill technological needs**. Our analysis focuses on how the talent shortage constrains technological innovation and explores successful talent management strategies, highlighting the potential 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 reference both of these complementary learning approaches.

The Japanese market provides a fascinating case study in these dynamics, with our data revealing insights about how organizations are approaching AI integration and talent management.

The growing demand for IT talent

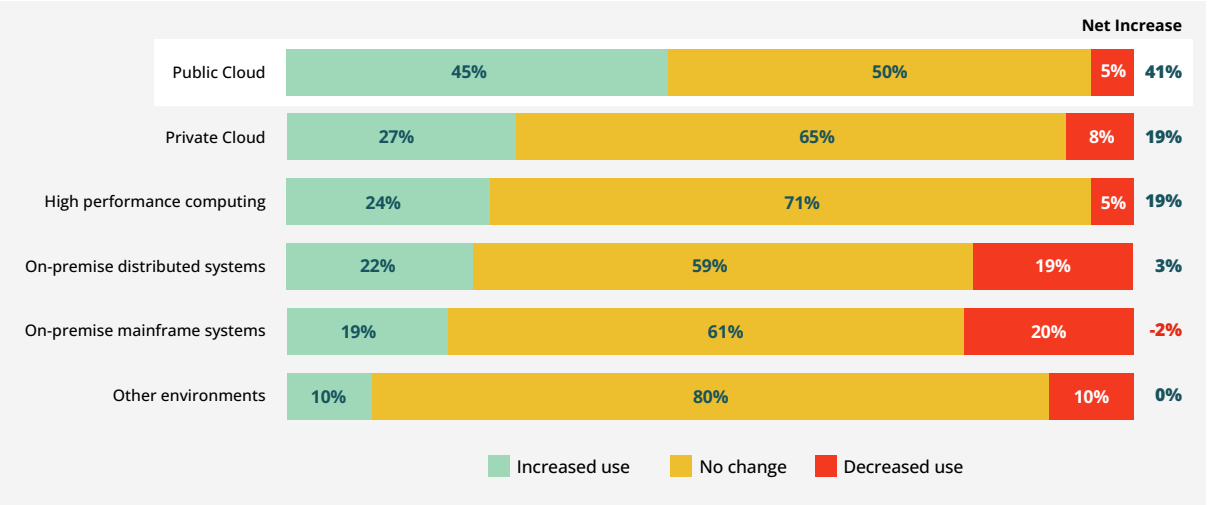
Organizations are modernizing their computing infrastructure, but Japan lags behind other regions

The accelerating shift toward modern computing infrastructure is creating unprecedented demand for IT talent globally, with cloud computing expertise becoming particularly critical. This transformation is especially significant for Japan, which faces unique challenges in both infrastructure modernization and talent development.

FIGURE 1: ORGANIZATIONS ARE INCREASING THEIR CLOUD COMPUTING ADOPTION

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

2025 Tech Talent, Q17, DKNS excluded (1 to 10%), Sample Size = 67, Japanese organizations only



As observed in Figure 1, Japan is poised for substantial growth in cloud adoption, with projections indicating a 41% net increase in public cloud usage over the next 18 months—the highest growth rate across all computing environments. This dramatic shift is accompanied by a modest decline (-2%) in traditional on-premise mainframe systems and minimal growth (3%) in on-premise distributed systems. This transformation represents a strategic shift for Japanese businesses seeking to remain competitive in an increasingly digital economy. Cloud infrastructure provides essential capabilities for modern business operations, including advanced AI implementation, machine learning applications, and sophisticated data analytics. Organizations that fail to modernize their computing infrastructure risk falling behind more technologically advanced competitors both domestically and globally. This substantial increase in cloud adoption leads to an urgent need for skilled professionals who can manage these modern computing environments.

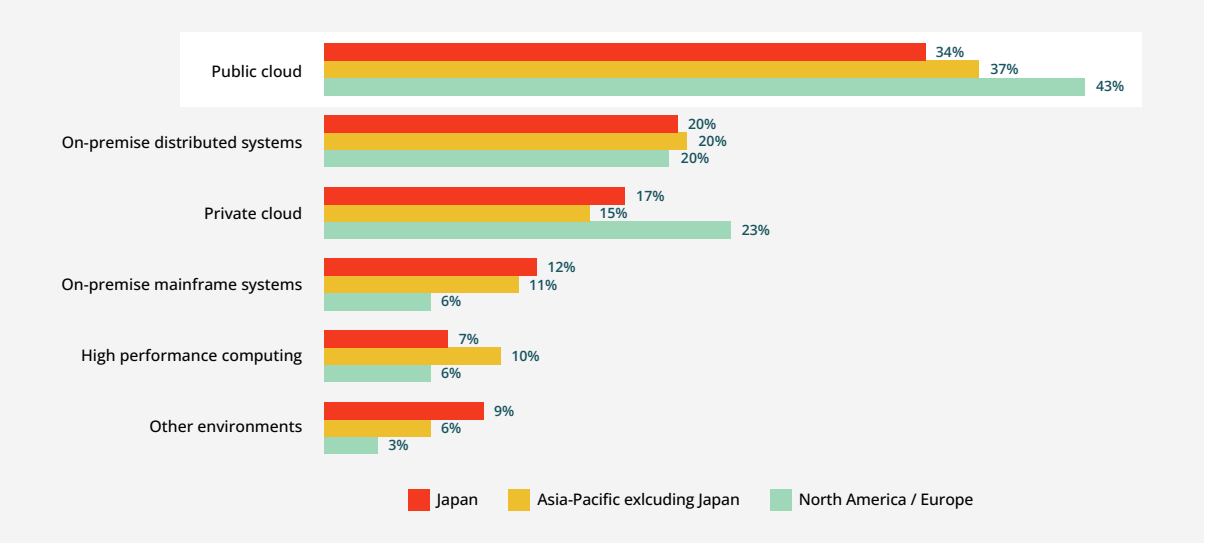
Despite the projected growth, Japan continues to trail other major economies in cloud adoption. Japan's current rate of 34% of IT workloads running on public clouds indicates a significant modernization gap when compared to North America and Europe (43%) and the rest of Asia-Pacific (37%) (see Figure 2). This gap is widening further, as only 45% of Japanese organizations plan to increase their public cloud adoption, compared to 54% of organizations in Asia-Pacific,

North America, and Europe. This widening disparity is particularly concerning given the rapid pace of digital transformation globally and the increasing importance of cloud-based solutions in driving business innovation and efficiency. As cloud technologies become more integral to competitive advantage—enabling everything from rapid service deployment to AI—this adoption gap can have long-lasting implications for Japanese businesses' ability to compete in the global market.

FIGURE 2: JAPAN LAGS BEHIND NORTH AMERICA/EUROPE AND OTHER ASIA-PACIFIC REGIONS IN PUBLIC CLOUD ADOPTION

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

2025 Tech Talent, Q16, average, Sample Size = 556



This gap can be partially explained by the workforce shortage. As observed in Table 1, Japanese organizations face substantial staffing deficits not only in cloud computing but also in other strategic technical areas compared to their global counterparts. Overall, Japanese organizations are 41% less staffed than North American and European counterparts and 21% less than Asia-Pacific levels. The gap is particularly severe in strategic areas such as DevOps, CI/CD, and Site Reliability, where Japanese organizations have relatively 70%[1] fewer staff

1 Note: The relative understaffing percentage is calculated by comparing Japan's staffing level to that of North America/Europe using the formula: (North America/Europe - Japan) / North America/Europe * 100

TABLE 1: STAFFING IN KEY STRATEGIC AREAS

Area	JAPAN	ASIA-PACIFIC EXCL. JAPAN	NORTH AMERICA / EUROPE
Cloud, Containers & Virtualization	52%	58%	73%
Cybersecurity	51%	43%	57%
System Administration	43%	44%	55%
Networking & Edge	30%	31%	41%
System Engineering	28%	37%	45%
AI, ML, Data & Analytics	27%	44%	54%
Privacy & Security	27%	30%	32%
DevOps, CI/CD & Site Reliability	22%	46%	75%
Web & Application Development	22%	43%	60%
Platform Engineering	18%	28%	53%

2025 Tech Talent, Q21, Sample Size = 506, Total Mentions = 2,941, options with few responses are not shown. Answers to the question *"Which of the following technology areas are staffed by technical headcount in your organization? (select all that apply)"*

than North American and European peers. Similarly concerning is the Platform Engineering sector, where Japanese organizations operate at 66% below North American and European staffing levels.

These findings highlight a dual challenge for Japanese organizations: they must simultaneously accelerate their digital transformation initiatives while developing a skilled workforce capable of managing modern computing environments. Organizations that fail to address both aspects risk losing competitive advantage in an increasingly technology-driven global market. The successful transition to cloud infrastructure requires not just technological investment, but also a comprehensive strategy for talent acquisition, development, and retention.

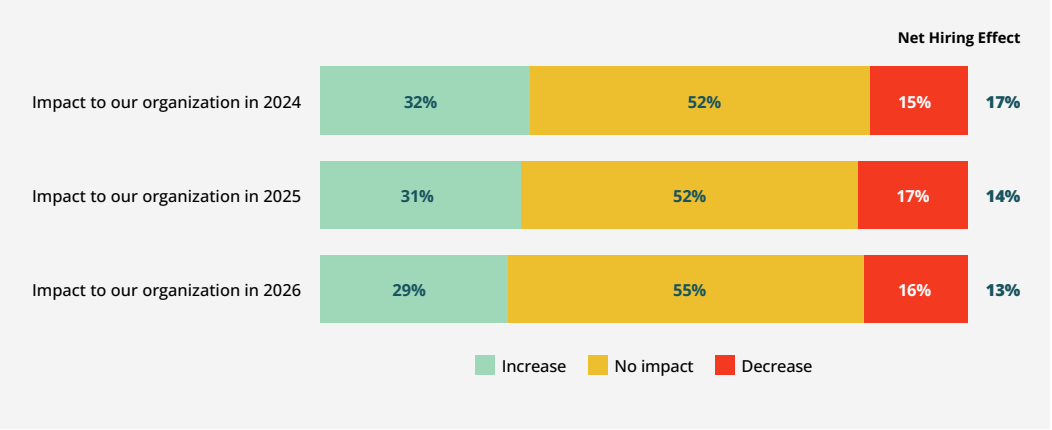
AI creates more jobs than it eliminates

Despite widespread assumptions that AI's automation capabilities would reduce workforce demand and mitigate the IT talent shortage, our research reveals the opposite. Our survey data shows that organizations are in fact expanding their IT workforce in response to AI adoption. As observed in Figure 3, the projected net hiring effect remains positive through 2026, ranging from 17% in 2024 to 13% in 2026, indicating an increasingly competitive job market for technical talent.

FIGURE 3: THE NET HIRING EFFECT FROM AI IS POSITIVE ACROSS THE YEARS

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

2025 Tech Talent, Q22, DKNS & NA excluded (3% to 7%), Sample Size = 67, Japanese organizations only.
Net Hiring Effect = % of organizations reporting headcount increase – % reporting headcount decrease

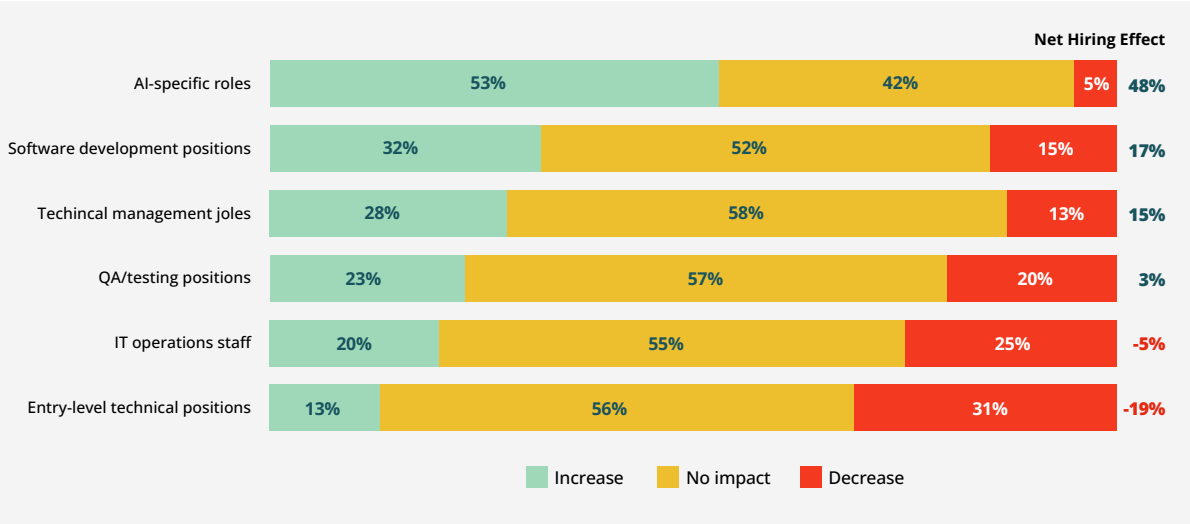


Moreover, we can notice that the workforce is undergoing a transformation in the nature of technical work. As shown in Figure 4, organizations are simultaneously scaling their workforce up and down across different roles, creating a dynamic job market where new positions emerge in some organizations while older positions evolve or fade. We also notice a growing demand for AI-related professionals, as over 50% of organizations are expanding their AI-specific workforce, creating additional demands in an already constrained pool of skilled technical workers.

FIGURE 4: THE NET HIRING EFFECT VARIES ACROSS ROLES

How has AI impacted your technical workforce in the following areas during 2024?

2025 Tech Talent, Q23, DKNS excluded (3% to 4%), Sample Size = 67, Japanese organizations only.



This pattern of job creation following automation has multiple historical precedents, both within and outside the IT industry. When ATMs were introduced in banking, tellers evolved into relationship managers as banks expanded their branch networks. Similarly, spreadsheet software transformed accountants from number crunchers into strategic advisors. In the IT sector, we've seen this pattern repeat with cloud computing: while it automated many traditional system administrator tasks, it created a surge in demand for cloud architects, DevOps engineers, and site reliability specialists. Similarly, when automated testing tools became widespread, many manual testers transitioned into automated testing engineers and quality assurance architects, focusing on test strategy and complex test scenario design rather than repetitive manual testing.

Recent studies support this transformative pattern. The Linux Foundation's 2024 AI study[2] also reports a positive net hiring effect in the industry, with 19% of organizations increasing hiring due to generative AI, compared to 14% downsizing. The World Economic Forum's Future of Jobs Report 2023[3] indicates that organizations expecting a positive AI impact on job growth outnumber those expecting a negative impact by 2.1 times. McKinsey Global Institute[4] predicts a 23% surge in STEM job demand by 2025, with 12 million occupational transitions potentially needed by 2030. The International Labour Organization[5] also concludes that AI is more likely to augment than eliminate jobs.

However, a concerning trend among Japanese organizations emerges in entry-level technical positions, which shows a -19% net hiring effect (see Figure 4). This decline signals potential disruption in traditional career development pathways and future talent pipeline challenges, as organizations increasingly prioritize candidates with advanced or specialized skill sets. However, how will emerging technical professionals acquire the foundational experience previously gained through entry-level positions? This scenario may result in a systemic gap in technical expertise, increasing the importance of proactive upskilling initiatives. While AI may not replace professionals, those who are not able to operate in AI-enabled environments will be replaced by those who do.

For Japanese organizations, navigating this transition successfully depends on rapidly developing AI capabilities while addressing existing technical talent gaps, particularly in strategic areas like cloud computing, DevOps, and platform engineering. The path forward lies not in resisting automation but in embracing it while ensuring workforce training through comprehensive upskilling initiatives. Organizations must focus on developing talent that can leverage AI capabilities while maintaining the human expertise necessary for strategic decision-making and innovation.

2 **https://www.linuxfoundation.org/hubfs/LF%20Research/lfr_genai24_111924.pdf**
3 **https://www.weforum.org/press/2023/04/future-of-jobs-report-2023-up-to-a-quarter-of-jobs-expected-to-change-in-next-five-years/**
4 **https://www.mckinsey.com/mgi/our-/generative-ai-and-the-future-of-work-in-america**
5 **https://www.ilo.org/publications/generative-ai-and-jobs-global-analysis-potential-effects-job-quantity-and**

AI does not replace workers, but it reshapes their roles

As AI continues to drive the modernization of IT, our data reveals that organizations worldwide expect AI to deliver substantial value across their core operations. As observed in Figure 5, IT Infrastructure Monitoring & Optimization emerges as the top priority, with 46% and 51% of organizations expecting significant value from AI in Japan and the broader Asia-Pacific region. This emphasis on infrastructure optimization likely reflects the region's response to skilled workforce constraints observed in Table 1. In contrast, North America and Europe show a different focus, with Software Development leading at 52% of organizations expecting significant AI value in this area. Data Analysis and Reporting stands out as a consistently high-priority area across all regions, with North America/Europe and Asia-Pacific both at 50%, and Japan at 45%. This alignment evidences the broad recognition of AI's potential to transform data into actionable insights and improve decision-making processes.

The impact of AI is also evident in how technical teams are adapting to AI integration in their daily work. As seen in Figure 6, 43% of the Japanese organizations report that their developers now spend significant time reviewing and validating AI-generated code, while 38% indicate that AI tools have taken over many traditional entry-level tasks. Furthermore, 35% of organizations have invested in upskilling their existing staff to effectively supervise and prompt AI tools, highlighting the shift in technical skill requirements.

The emergence of new AI-focused roles further demonstrates this transformation. As observed in Figure 7, organizations are creating specialized positions to manage and oversee AI implementation, with AI Quality Assurance Engineers and AI Product Managers leading the way (both at 45%). Security and operational oversight are also priorities, as shown by the significant demand for AI Safety Engineers (38%), AI & ML Operations Engineers (34%), and AI Governance Specialists (34%).

As with previous technological shifts like cloud computing, organizations that fail to modernize their infrastructure and incorporate AI capabilities risk falling behind their competitors. The pattern reflects a broader shift in skill requirements and job functions, where AI-enabled productivity gains are not

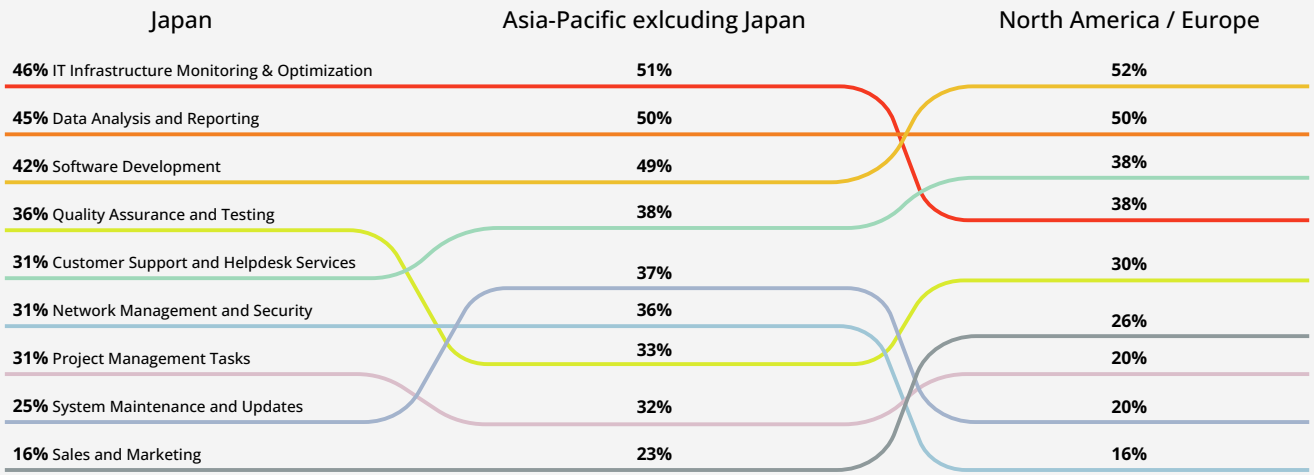


FIGURE 5: ORGANIZATIONS EXPECT AI TO DELIVER SIGNIFICANT VALUE ACROSS A BROAD RANGE OF CORE ACTIVITIES

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

2025 Tech Talent, Q24, Sample Size = 556, Some options were omitted due to low response rate.

merely automating tasks but catalyzing entirely new categories of technical work. These changes in team dynamics and organizational structure highlight how AI is not just transforming what work gets done, but also how it gets done and who does it. A balanced approach to AI adoption, considering both technical implementation and workforce transformation, will likely be essential for organizations seeking to maximize the value of their AI investments.

97%
of organizations expect that AI will provide significant value in key strategic areas

FIGURE 6: 85% OF ORGANIZATIONS REPORT SIGNIFICANT CHANGES TO THEIR TECHNICAL WORK DUE TO AI

How has AI changed your technical team's work in 2024? (select all that apply)

2025 Tech Talent, Q27, Sample Size = 67, Total Mentions = 120, DKNS excluded, Japanese organizations only

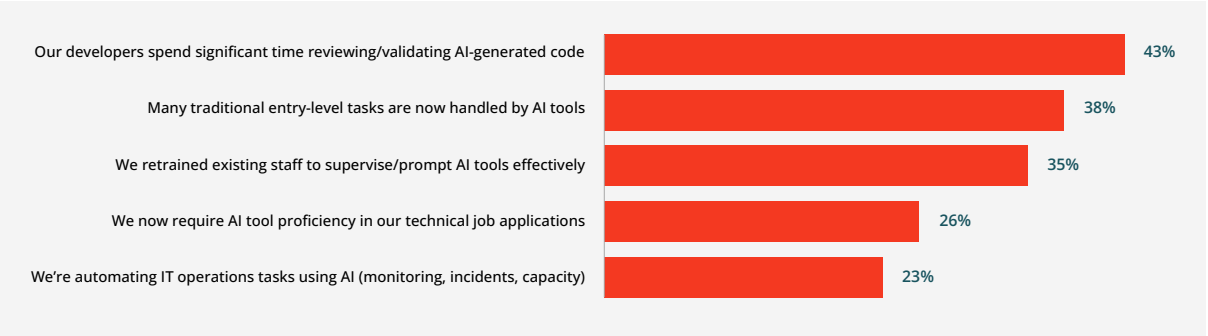
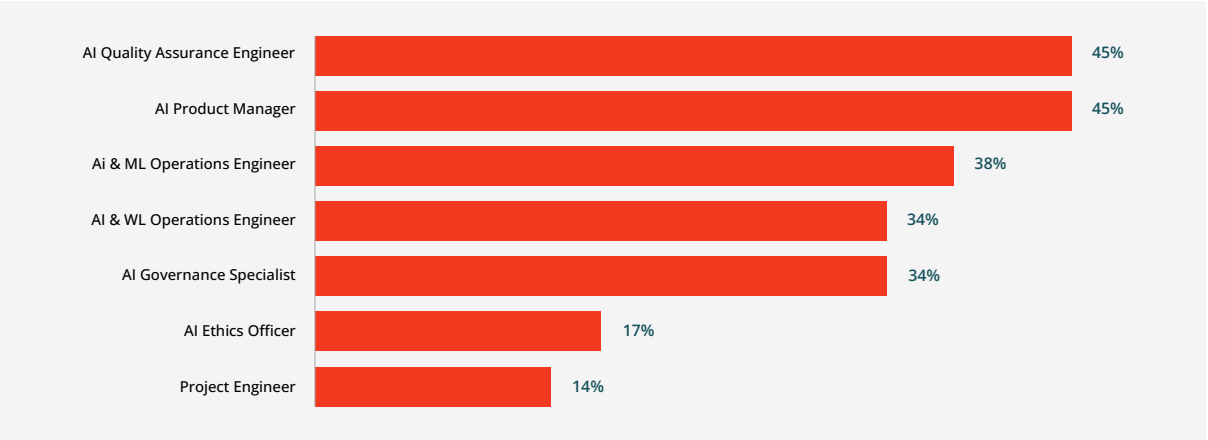


FIGURE 7: AI IS CREATING DEMAND FOR NEW EXPERTISE AND JOB FUNCTIONS

Which new AI-focused roles have emerged in your organization? (select all that apply)

2025 Tech Talent, Q28, answered only by Q23.6 (AI-specific roles) = "Increase",
Sample Size = 34, Total Mentions = 71, DKNS excluded (15%), Japanese organizations only



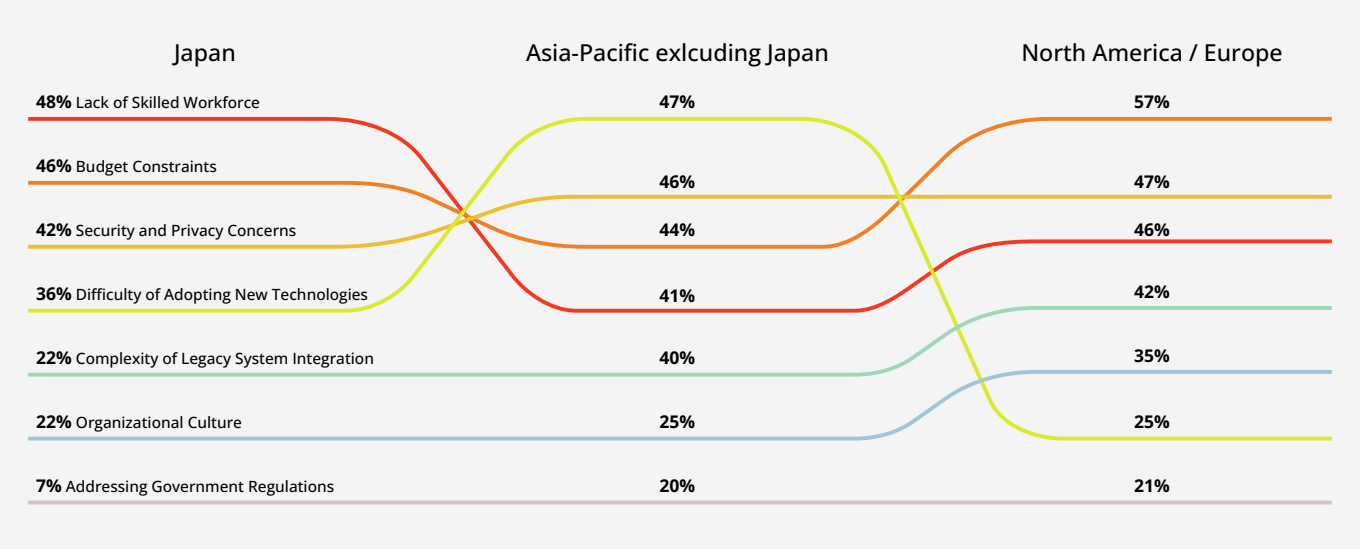
The shortage of skilled professionals

The tech talent crisis is a barrier to modernization

In Japan, the lack of skilled workforce emerges as the dominant barrier to modernization (#1 in Figure 8). This talent shortage significantly outranks the same concern in other Asia-Pacific countries (#4) and North America/Europe (#3), positioning it as Japan's distinctive modernization hurdle. This suggests that Japan's modernization challenges may be more focused on human capital development rather than technological, financial, or cultural transformation barriers that dominate other markets.

FIGURE 8: THE LACK OF SKILLED TALENT IS THE BIGGEST CHALLENGE IN ADOPTING NEW TECHNOLOGIES IN JAPAN

2025 Tech Talent, Q18, Sample Size = 556, Total Mentions = 1,489. Some options were omitted due to low response rate.



In Japan, the lack of skilled workforce emerges as a pervasive challenge across all key technological areas, with 70-73% of organizations reporting being understaffed, as observed in Figure 9. This talent shortage significantly outranks the same concerns in other Asia-Pacific countries (38-50%) and North America/Europe (42-60%). Particularly striking is that in strategic areas like cloud computing and AI/ML engineering, more than 70% of Japanese organizations report being understaffed, compared to around 40 to 60% in other regions. This widespread understaffing in Japan helps explain the technological adoption and implementation gaps observed in the previous sections.

Organizations lack skills to support AI initiatives

Our data also reveals that organizations lack key skills to support their AI initiatives. As observed in Figure 10, even the most common AI-related skills are present in less than 40% of organizations, highlighting a significant barrier to effective AI implementation and scaling of intelligent technologies.

The highest concentration of AI capabilities centers around AI-assisted development and prompt engineering, each present in 39% of surveyed organizations. While these leading indicators suggest some organizations are building basic AI implementation capabilities, the fact that over 60% lack these fundamental skills points to a significant challenge in achieving broad AI adoption.

The capability gap becomes more pronounced when examining operational and integration skills, which could help alleviate the technical talent shortage in IT computing infrastructure. Only 30% of organizations possess AI tool integration capabilities, while 28% have developed AI operations expertise. These figures suggest that while some organizations can initiate AI projects, many lack the operational skills to maintain and scale these initiatives effectively.

Security capabilities present another significant concern, with only 28% of organizations reporting AI security management capabilities. This shortage is particularly alarming given the increasing sophistication of AI-related security threats and the growing regulatory focus on AI governance and

FIGURE 9: ORGANIZATIONS ARE UNDERSTAFFED IN KEY TECHNOLOGICAL AREAS

% of organizations reporting being understaffed in each area

2025 Tech Talent, Q19, Sample Size = 556, DKNS excluded (3% to 6%)

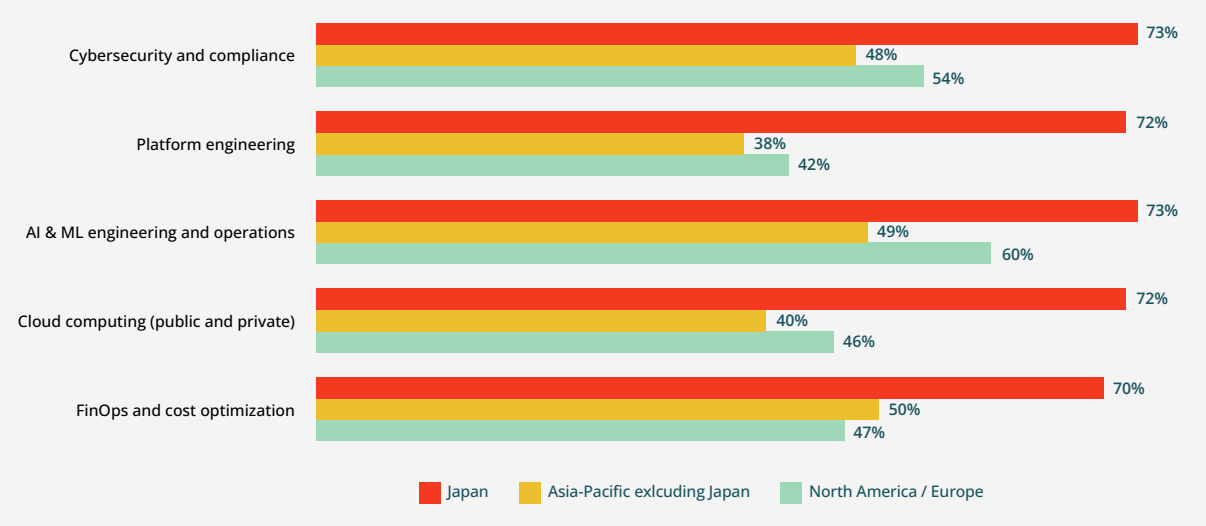
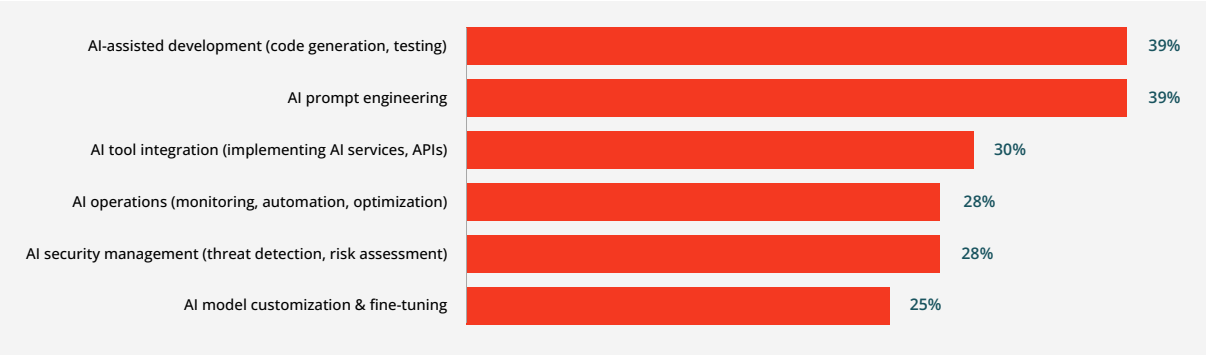


FIGURE 10: CORE AI SKILLS ARE MISSING IN OVER HALF OF JAPANESE ORGANIZATIONS

What AI-related skills does your organization currently have on staff? (select all the apply)

2025 Tech Talent, Q26, Sample Size = 67, Total Mentions = 136. Some options are not shown due to the low response rate. Japanese organizations only.



risk management. The lack of security expertise could expose organizations to significant vulnerabilities as they deploy more AI systems across their operations.

Also noticeable is the scarcity of advanced AI capabilities, with only 25% of organizations possessing AI model customization and fine-tuning expertise. This limitation suggests that even among organizations implementing AI, many are confined to standardized solutions, potentially missing opportunities for competitive differentiation through customized AI applications. The ability to tailor AI models to specific business needs represents a fundamental capability gap that could limit organizations' ability to extract maximum value from their AI investments.

Looking ahead, organizations must take decisive action to address these capability gaps. This includes developing comprehensive AI skills development programs and prioritizing building security and operational capabilities alongside technical skills to ensure successful AI implementation.

Upskilling as the key strategy

Organizations prefer to upskill existing talent

Organizations needing to modernize their infrastructure face a critical dilemma: hire new talent or upskill existing ones. Our results reveal a clear trend, with upskilling emerging as the top priority of workforce development strategies, as observed in Figure 11. Besides, as shown in Figure 12, 94% of organizations view upskilling as strategically important, with 57% considering it very or extremely important.

The preference for developing internal talent emerges as a top strategy when examined across technical domains. As observed in Figure 13, organizations prefer upskilling existing talent over new hires by a factor of 2.8, and over consultants by a factor of 3.0. In cloud computing, for example, organizations opt for upskilling existing staff 60% of the time, more than double the rate of hiring new talent (26%). As cloud infrastructure

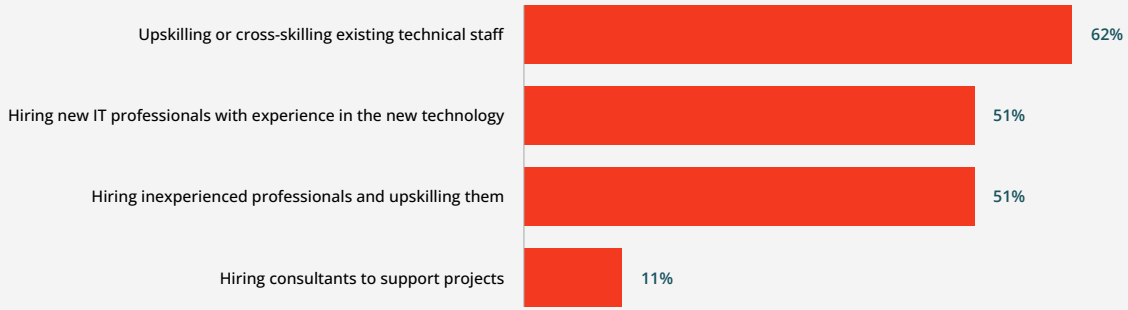


FIGURE 11: UPSKILLING IS THE LEADING STRATEGY TO MEET TECHNICAL SKILL DEMANDS IN JAPAN

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)

2025 Tech Talent, Q29, Sample Size = 67, Total Mentions = 67. Cross-skilling and upskilling combined. DKNS excluded (7%). Japanese organizations only.

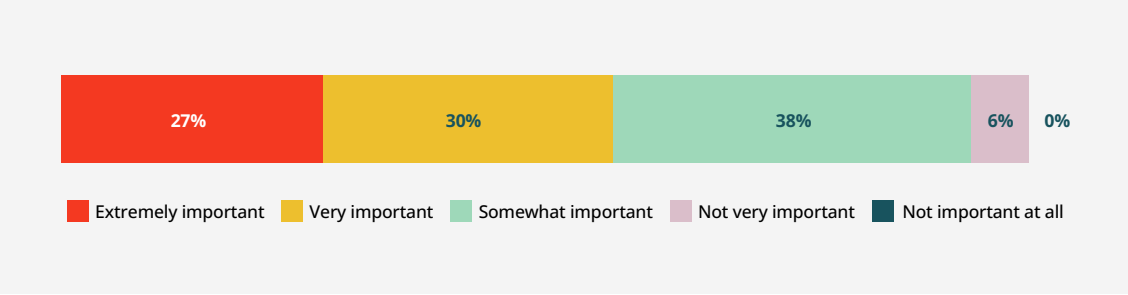


FIGURE 12: 94% OF JAPANESE ORGANIZATIONS RECOGNIZE UPSKILLING AS A STRATEGIC PRIORITY

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

2025 Tech Talent, Q30, DKNS excluded (4%), Sample Size = 67. Japanese organizations only.

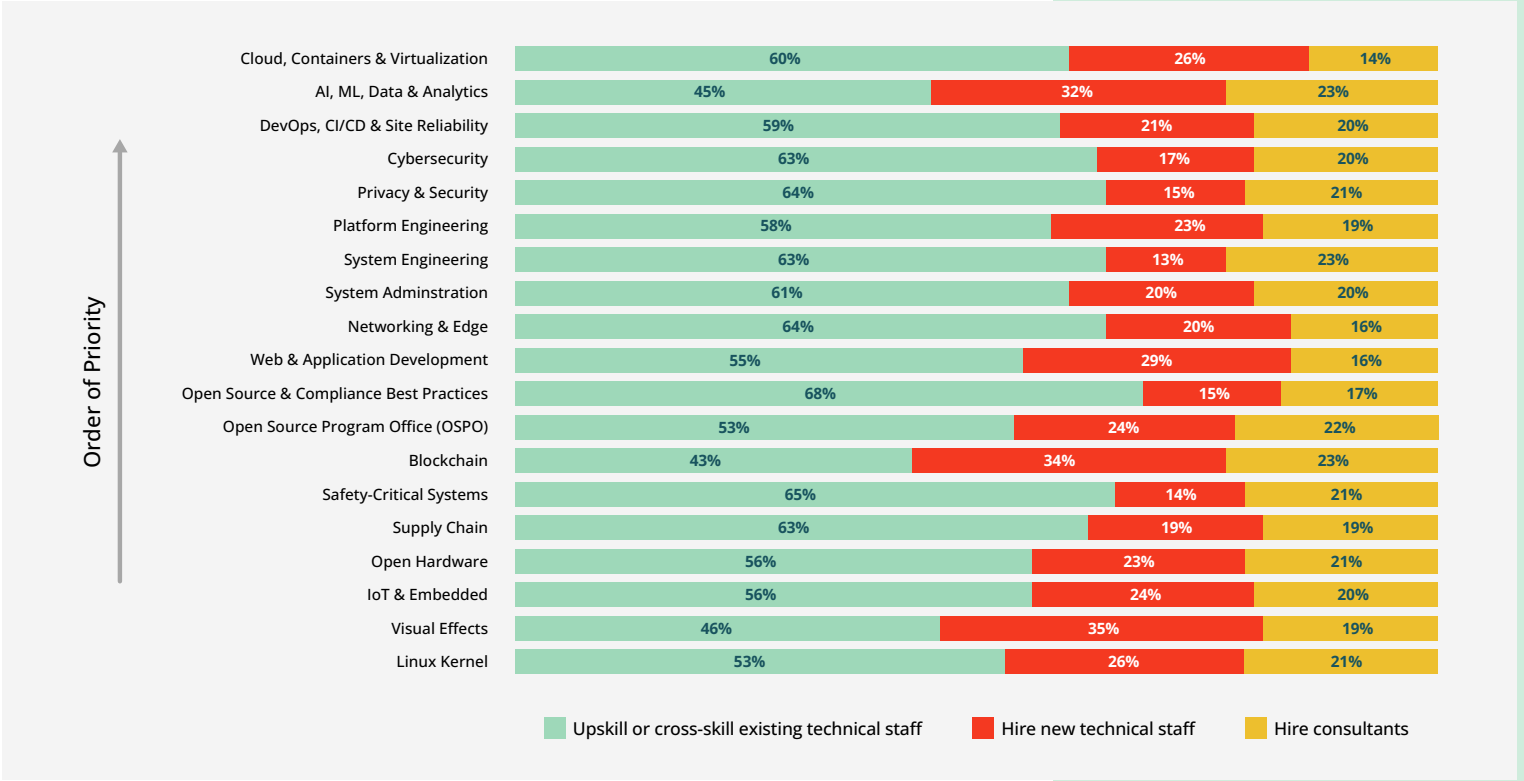
becomes increasingly interwoven with legacy systems, security frameworks, and business processes, organizations recognize that their existing workforce—armed with deep institutional knowledge—is best positioned to drive cloud transformation when equipped with new skills. The low preference for cloud consultants (14%) further reinforces this strategic bet on internal talent. For AI and machine learning, while the preference for upskilling remains strong at 45%, the higher proportions for new hiring (32%) and consultants (23%) suggest a recognition of AI's unique challenges. Organizations appear to be crafting a hybrid approach that leverages existing talent while strategically injecting new expertise. Organizations are finding out that their existing talent pool, when properly developed, can drive innovation more effectively than external recruitment alone.

This strategic focus on internal talent development may prove to be one of the most significant organizational adaptations to the digital age, fundamentally altering how companies build and maintain their technical capabilities. As technology continues to evolve at an accelerating pace, the ability to rapidly upskill existing talent could become the primary differentiator between organizations that thrive and those that merely survive in an increasingly complex technical scenario.

FIGURE 13: UPSKILLING IS PREFERRED ACROSS STRATEGIC AREAS IN JAPAN

For the following technology areas, which approach would you prioritize in 2025 to meet the organization's needs?

2025 Tech Talent, Q42, DKNS excluded (6% to 13%), Sample Size = 67. Japanese organizations only



It is faster to upskill existing talent than to hire

One of the primary reasons for the clear preference toward upskilling can be related to the significant time savings compared to hiring and onboarding new employees. This disparity is particularly pronounced in Japan, where traditional hiring and onboarding processes require approximately 12.7 months, compared to only 5.7 months for upskilling—a difference of 124% (see Figure 14). Although smaller, similar trends appear in other regions, with a difference of 72% in the rest of Asia-Pacific and 46% in North America and Europe, consistently indicating that upskilling is considerably faster.

This difference can be even wider for more senior positions. Figure 15 illustrates a correlation between position seniority and time-to-hire. Executive positions require the longest hiring periods, averaging 8.8 months, with 29% taking more than a year to fill. This hiring timeline gradually decreases through director (8.5 months), manager (8.1 months), and senior technical roles (8.2 months), with mid-level technical positions requiring 6.7 months and entry-level technical roles taking 5.4 months on average. Notably, even entry-level positions require significant time investment, with only 28% filled in under three months. These findings further emphasize why organizations increasingly favor upskilling internal talent—the considerable time investment required for external hiring across all position levels creates operational gaps that internal development can substantially reduce.

FIGURE 14: HIRING + ONBOARDING IN JAPAN TAKES 124% LONGER THAN UPSKILLING

2025 Tech Talent, Q32, Q34, Q39, Sample Size = 556

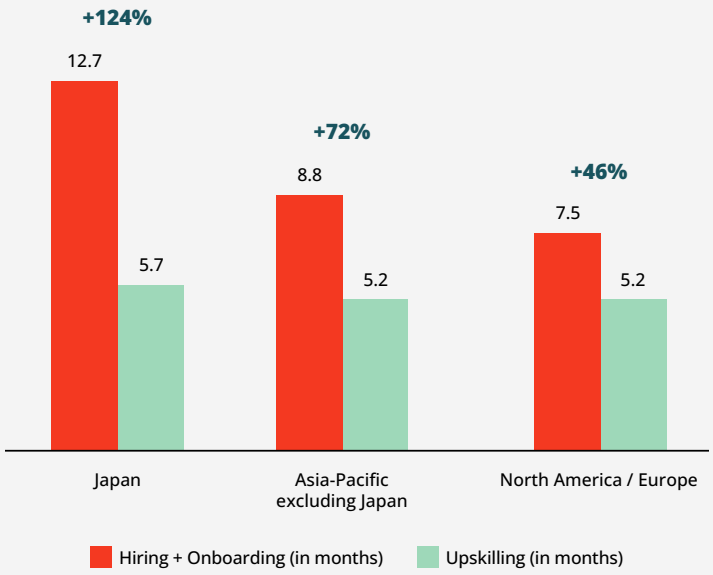
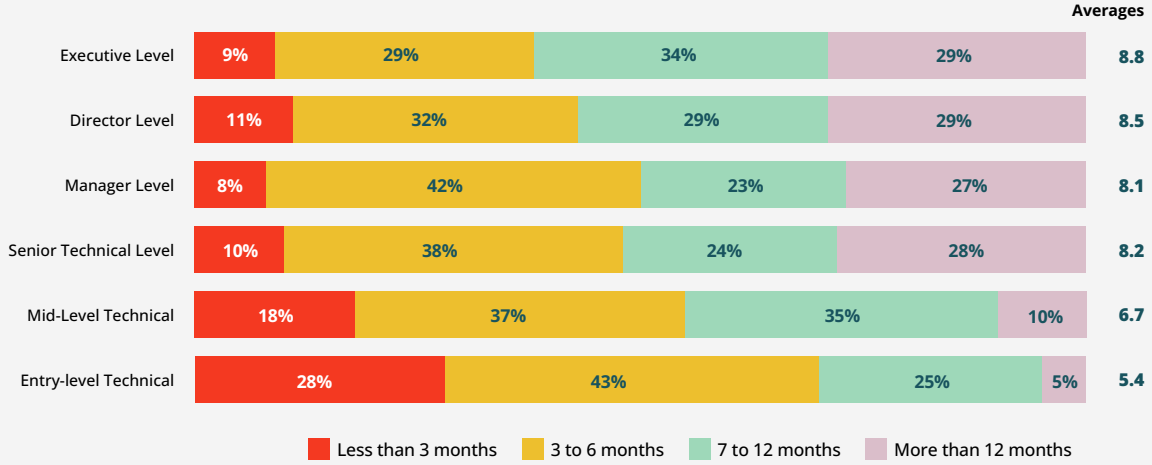


FIGURE 15: TIME TO HIRE IS PROPORTIONAL TO SENIORITY

About how long does it take to hire a headcount to fill an open position in your organization for the following seniority levels?

(select one response per row)

2025 Tech Talent, Q33, DKNS excluded (9% to 16%), Sample Size = 67. Japanese organizations only.



In an era where competitive advantage often hinges on rapidly adapting to technological change, the ability to transform existing talent nearly twice as quickly as acquiring new talent represents a significant strategic advantage. Beyond mere time efficiency, upskilling capitalizes on existing employees' familiarity with organizational culture, established processes, and institutional knowledge. Organizations can achieve their workforce transformation goals more rapidly while preserving valuable institutional expertise by prioritizing internal talent development over external recruitment.

Upskilling is effective for retaining talent

The risks of hiring new talent extend beyond just lengthy recruitment cycles. Our data reveals a concerning pattern of early departures: 28% of newly onboarded technical staff exit the organization—through resignation or termination—within their first six months (Figure 16). This substantial early turnover creates a costly cycle of recruitment, training, and replacement. When combined with the extended hiring periods shown in Figure 14, these early departures represent a significant drain on organizational resources and productivity, further emphasizing why investing in existing employee development offers a more stable and efficient talent strategy. Retaining top talent helps preserve institutional knowledge, maintain team cohesion, and create the relevant expertise that comes from sustained organizational experience.

As shown in Figure 17, our survey reveals the success of technical growth initiatives (97% adoption, 98% effectiveness) and workplace flexibility benefits (95% adoption, 98% effectiveness) in employee retention. It is also noteworthy that career advancement opportunities achieve the highest "very effective" rating for retention, at 12 percentage points above work environment benefits. While competitive compensation packages maintain their importance (92% adoption, 93% effectiveness), their relatively lower ranking compared to development-focused initiatives aligns with the previous findings, evidencing the importance of workforce development initiatives.

FIGURE 16: ON AVERAGE, 28% OF THE NEW HIRES IN JAPANESE ORGANIZATIONS LEAVE WITHIN 6 MONTHS

On average, what percentage of new technical staff hires resign or were asked to leave within 6 months of being onboarded? (select one)

2025 Tech Talent, Q35, Sample Size = 67, DKNS excluded (9%). Japanese organizations only.

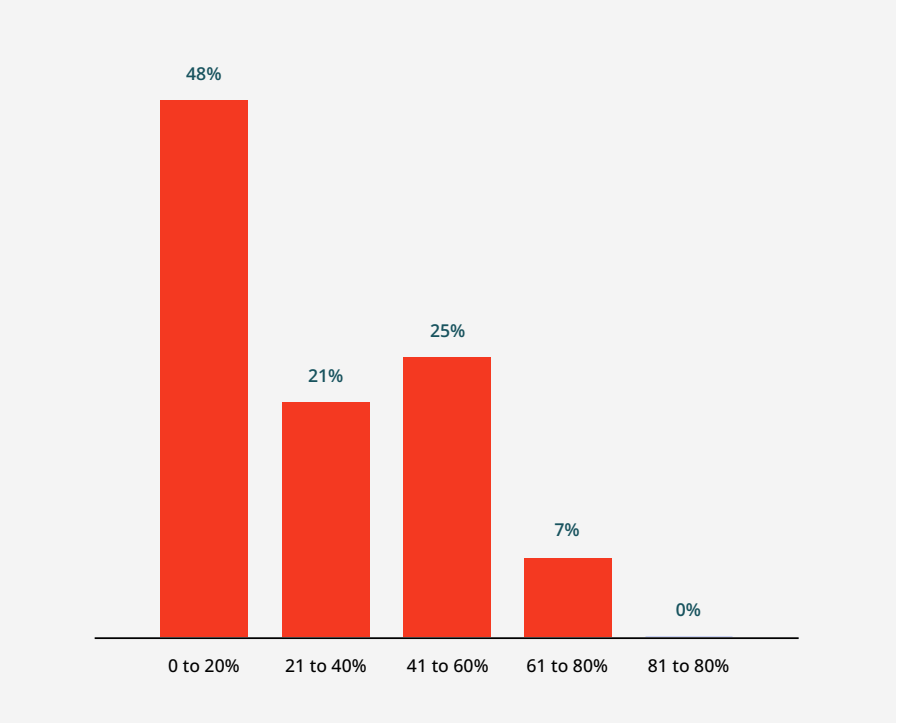
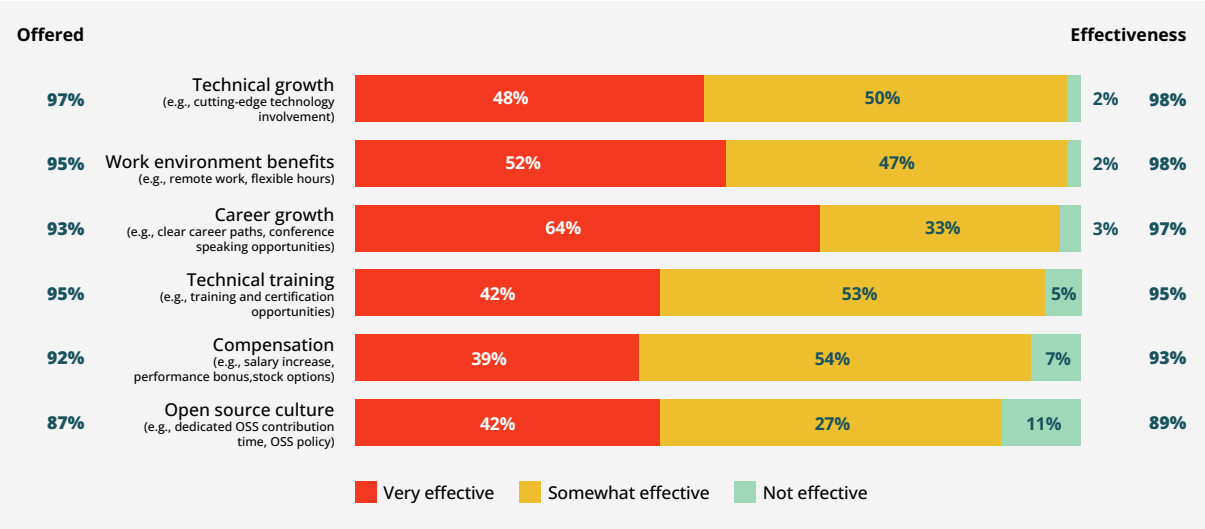


FIGURE 17: TOP STRATEGIES FOR RETAINING TALENT IN JAPAN

What strategies does your organization employ to retain technical talent? Rate the effectiveness of each:

2025 Tech Talent, Q31, DKNS excluded (4% to 7%), Sample Size = 67. Japanese organizations only.



Our survey also reveals the effectiveness (89%) of open source culture initiatives in retaining tech talent, recognizing that modern technical talent seeks more than just competitive salaries—they desire participation in broader technical communities and knowledge sharing. This holistic approach to talent development—combining technical growth, workplace flexibility, and community engagement—creates a compelling environment that both attracts and retains high-performing technical staff.

Benefits and challenges of upskilling the workforce

Career development and capability expansion emerge as the dominant benefits of upskilling technical staff. Nearly half (48%) of respondents indicate that upskilling or cross-skilling provide career development opportunities that can lead to higher job satisfaction, while 46% view upskilling as an ideal pathway for junior technical staff to expand their capabilities (see Figure 18). These top two benefits highlight the strong emphasis on employee growth and advancement. The operational advantages of upskilling are also significant, with 40% noting that it produces employees with varied skillsets who can be redeployed more effectively than new

hires. The cost effectiveness and strategic staffing benefits of upskilling are equally valued, with 34% of respondents citing both its economic advantage compared to new hiring and its effectiveness in filling senior positions when technical talent is scarce. Compared to 2024, there is a notable shift in priorities, with most benefits showing higher importance in 2025, particularly in areas related to career development and capability expansion.

Our respondents also report challenges of upskilling technical staff, which primarily center around the practical implementation of training programs. The two most significant hurdles are the time-intensive nature of upskilling for complex roles (37%) and the difficulty in translating theoretical knowledge into practical applications (36%) (see Figure 19). Creating and maintaining an environment conducive to continuous learning represents another significant challenge at 33%. Resource allocation is also a concern, with 30% of respondents noting that resources are diverted from other priority areas.

FIGURE 18: TOP BENEFITS FOR UPSKILLING TECHNICAL STAFF IN JAPAN

What are the main benefits to upskilling or cross-skilling staff? (select all that apply)

2025 Tech Talent, Q40, Sample Size = 67, Total Mentions = 67. Some options were omitted due to low response rate. Japanese organizations only.

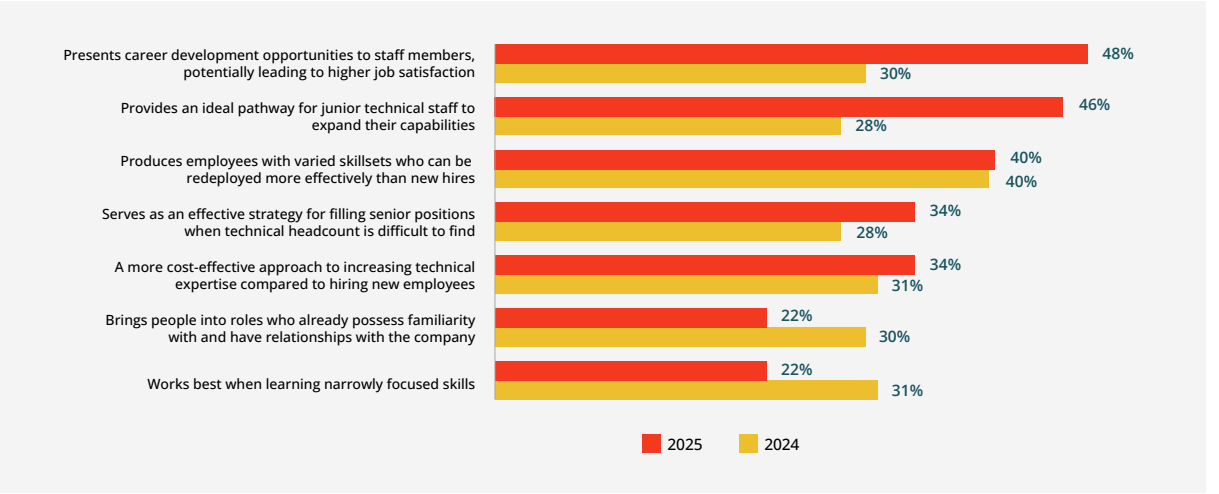


FIGURE 19: TOP CHALLENGES FOR UPSKILLING TECHNICAL STAFF IN JAPAN

What are the main challenges to upskilling or cross-skilling staff? (select all that apply)

2025 Tech Talent, Q41, Sample Size = 67, Total Mentions = 142. Some options were omitted due to low response rate. Japanese organizations only.

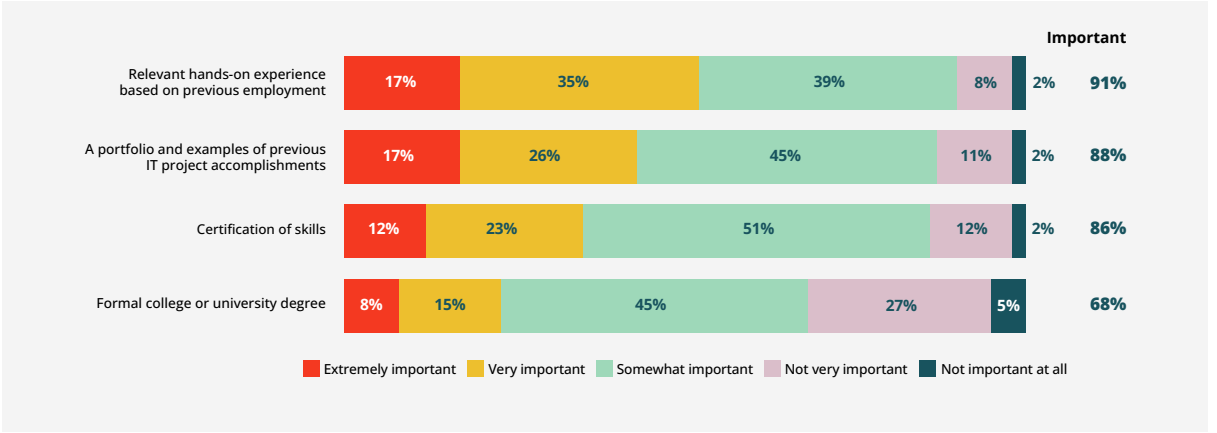
Strategies to hire new talent

Our survey also identified how the technology sector evaluates technical skills (see Figure 20). Hands-on experience emerged as the most valued factor at 91% importance. This strong preference for practical experience suggests that companies might find more success in upskilling their existing workforce rather than hiring new talent, as they already have detailed visibility into their current employees' hands-on experience and can more easily validate their practical capabilities through internal projects and assignments.

FIGURE 20: HANDS-ON EXPERIENCE AND PORTFOLIO OF ACCOMPLISHMENTS ARE KEY TO EVALUATING TECHNICAL SKILLS

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

2025 Tech Talent, Q36, DKNS excluded (1 to 3%), Sample Size = 67. Japanese organizations only.



The high value placed on portfolios and previous IT project accomplishments (88% importance) reinforces the significance of demonstrable skills over theoretical knowledge. This insight has important implications for both personal and organizational development strategies. For individuals, contributing to open source software projects represents an excellent opportunity to build a publicly verifiable portfolio of work. OSS contributions not only demonstrate technical proficiency but also show collaboration skills, code quality, and the ability to work within established development frameworks – all while creating a permanent, public record of one's capabilities that potential employers can evaluate.

Certification of skills ranks as the third most important factor at 86%, indicating that formal validation of knowledge is valuable. Certifications serve as a standardized way to verify expertise in specific technologies, frameworks, or methodologies, making them an essential component of technology professionals' credentials. They are particularly valuable for demonstrating mastery of specific technical competencies, validating up-to-date knowledge of rapidly evolving technologies, and providing employers with confidence in a candidate's theoretical understanding and practical capabilities. Organizations should actively support and encourage certification programs as part of their professional development initiatives, especially because, as shown in Figure 17, training and certification opportunities are highly effective in retaining technical talent.

Interestingly, formal college or university degrees rank significantly lower at 68% importance, with only 8% considering them "Extremely important." This reinforces that the technology sector values practical capabilities over academic credentials, suggesting that companies should prioritize experience-based training initiatives and hands-on skill development programs. For organizations considering upskilling programs, this data supports structuring such initiatives around practical project work and portfolio building, potentially incorporating certification milestones while maintaining the primary focus on developing real-world experience and demonstrable capabilities.

Conclusion

In conclusion, the 2025 State of Tech Talent report highlights a significant tech talent gap in Japan, particularly in areas like cloud computing and AI, which hinders modernization efforts despite a projected increase in cloud adoption. While AI is expected to create a net positive hiring effect, it is also reshaping roles and reducing entry-level positions. The report emphasizes that upskilling existing talent is a preferred and faster strategy for organizations to meet technical skill demands and improve retention, compared to the lengthy and costly process of hiring new employees. Key recommendations involve prioritizing internal talent development through upskilling and cross-skilling initiatives, fostering a continuous learning environment, and recognizing the importance of hands-on experience and certifications for evaluating technical skills.

Methodology and demographics

About the survey

This study is based on a web survey conducted by Linux Foundation Research in March 2025. The survey aimed to understand trends in technical hiring and the effects of AI 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 the data quality filtering, our final sample comprised 556 valid responses, 67 from Japan, 148 from Asia-Pacific excluding Japan, 291 from North America or Europe, and 50 from other countries.

The survey comprised 42 questions that addressed screening, respondent demographics, AI's impact in organizations, and ways to address talent management needs. The dataset driving the analysis in this report and survey frequencies can be found on Data.World.

The target audience included respondents who met the following criteria:

- Must be responsible hiring, recruiting, or training information technology (IT) professionals
- Must pass an attention check question.
- Must be currently employed by an organization.

A total of 3,237 respondents began the survey and 603 completed the survey. After data quality screening, the analyzed data set comprises 556 responses. The margin of error for this sample size is +/- 3.50% at a 90% confidence level and +/- 4.16% at a 95% confidence level. The data was primarily segmented by region.

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 is 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 is because we can classify the missing data as either missing at random or missing completely at random. Excluding DKNS data from a question does not change the distribution of data (counts) for the other responses, but it does change the size of the denominator used to calculate the percentage of responses across the remaining responses. This has the effect of proportionally increasing the percentage values of the remaining responses. Where we have elected to exclude DKNS data, the footnote for the figure indicates "DKNS responses excluded from the analysis."

The percentage values in this report may not total exactly 100% due to rounding.

Data.World access

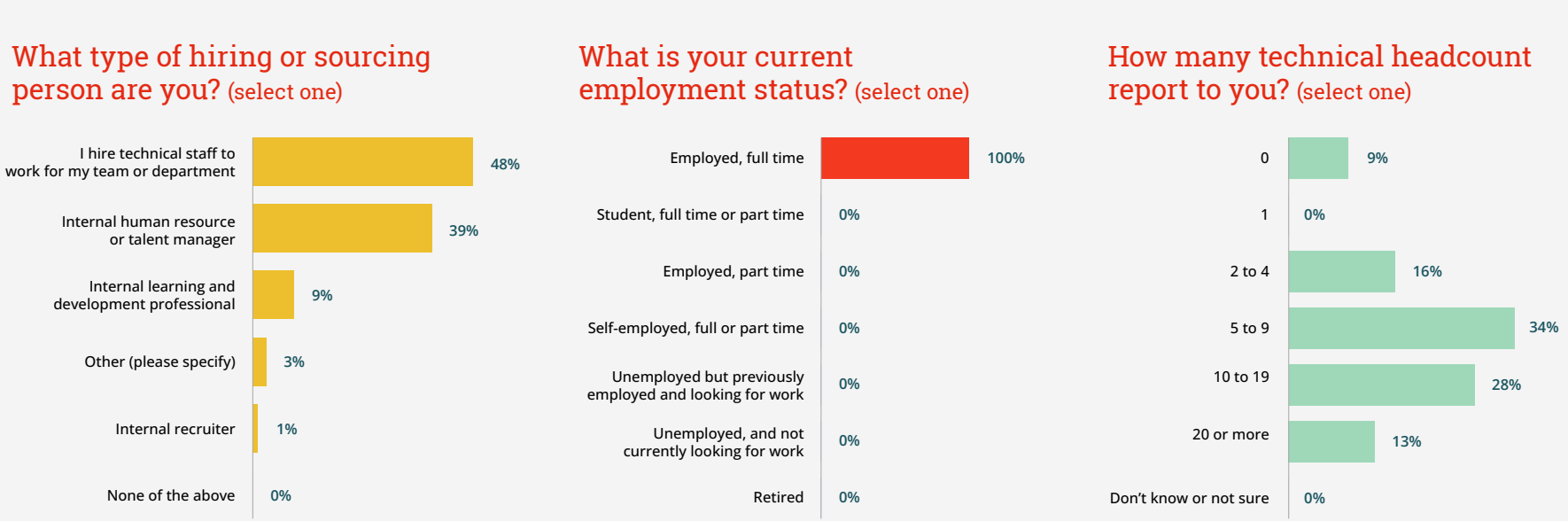
LF Research makes each of its empirical project datasets available on Data.World. Included in this dataset are the survey instrument, raw survey data, screening and filtering criteria, and frequency charts for each question in the survey. LF research datasets, including this project, can be found at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

Respondent demographics

Figure 21 presents the Japanese respondent demographics. Most respondents (48%) are hiring managers for technical teams, followed by HR/talent managers (39%). All respondents are employed full-time, with the majority working in mid-to-large organizations - 51% work in companies with 250-4,999 employees, and 27% in enterprises with 5,000+ employees. Most respondents manage moderate-sized technical teams, with 34% overseeing 5-9 direct reports and 28% managing 10-19 people. The professional roles are fairly distributed across talent management/recruiting (16%), human resources (16%), and software development (15%), suggesting a balanced representation of technical and HR functions. Notably, the respondents work primarily in companies focused on either industry-specific products/services (52%) or IT/Technology services (48%). In terms of regional distribution, the whole sample consisted of 12% from Japan, 27% from the rest of Asia-Pacific, and 52% from North America or Europe.

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.

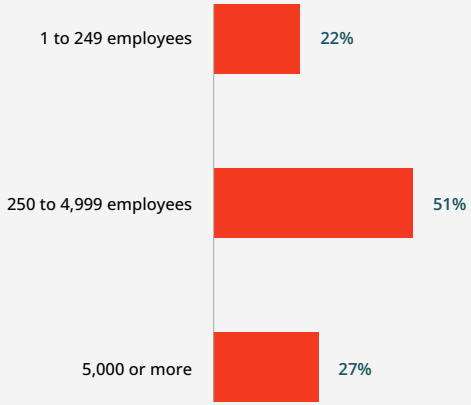
FIGURE 21A: RESPONDENT DEMOGRAPHICS



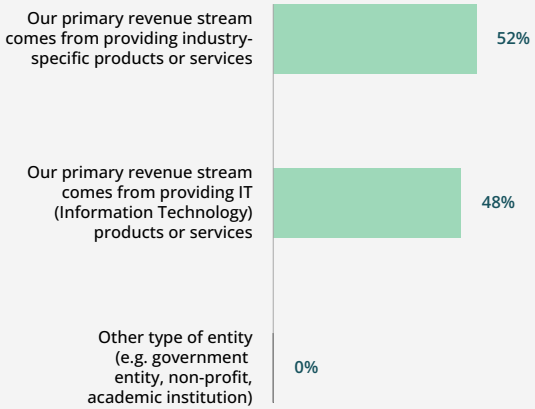
2025 Tech Talent, Q2, Q5, Q7, Q8, Q10, Q14, Sample Size = 67. Japanese organizations only.

Professionally, which role or field do you most closely identify with? (select one)

Which option best describes the company or entity you work for? (select one)



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



2025 Tech Talent, Q8, Q10, Q14, Sample Size = 67. Japanese organizations only.

FIGURE 21B: RESPONDENT DEMOGRAPHICS

About the authors

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Acknowledgments

We thank all the people who participated in the survey. Special thanks to Linux Foundation colleagues for their involvement in the various stages of the research process: Hilary Carter, Noriaki Fukuyasu, Stephen Hendrick, Anna Hermansen, Christina Oliviero, Scott Punk, Mieko Sato, Clyde Seepersad, Mary Simpkins.

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June 2025

To reference this work, please cite as follows: Marco Gerosa and Adrienn Lawson, "2025 State of Tech Talent Japan Report: Trends in Technical Hiring, AI Disruption, and the Skills Gap," foreword by Noriaki Fukuyasu, The Linux Foundation, June 2025.

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