



How The Tech Industry Can Close Critical Skills Gaps

The tech industry faces critical skill shortages, particularly in AI, machine learning, blockchain, and cybersecurity. Enterprise organizations, as well as startups, are struggling to find qualified talent, causing project delays, stifling innovation – and hampering growth.

Digital transformation is driving the demand for technical skills in almost every organization – and, with global spending on digital transformation set to reach nearly \$4 trillion by 2027 ([according to IDC](#)), competition for tech talent is absolutely not limited to companies operating only in that industry.



In the US, the demand for tech talent will grow to 7.1 million tech jobs by 2034, from an estimated six million in 2023.

– [CompTIA](#)

The demand for specialized skills is growing, and the specific skills tech companies actually need are changing more quickly than ever (with no signs of slowing down) – largely due to the emergence of new technology.



Job postings in the United States requiring skills in “generative artificial intelligence” jumped more than 1,800% during 2023.

– [Lightcast](#)

Rapid technological advancements are outpacing traditional education and workforce training, leaving many graduates unprepared – but workforce training is also slow to keep up.

Organizations urgently need a new, proactive, skills-based approach to getting the right tech talent. Those that do this well will be able to navigate change, build a more resilient workforce, innovate better, and ultimately retain a competitive edge in a challenging market.

This skills-based approach – to hiring, to development and redeployment, and to planning – requires a fundamental shift in how businesses look at talent, and at jobs. Eschewing the traditional approach, where people without a degree or matching job title are often filtered out, companies must rethink job descriptions, candidate profiling, learning, and providing internal opportunities.

The key to success rests on technology and data: AI-driven insights that can help leaders to spot new or potential skills gaps, and recommend the best way to close them – whether through external hiring, retraining existing employees with adjacent skills, redeploying talent, or automating tasks.



Embracing “skills”

“Using skills as that currency allows you to hire faster; and hire better, because you’re looking at the skill, not necessarily the individual or the jobs that they had before. It allows you to be relevant in the market and to move with pace.”



Andi Zyka

[Director, Employee Success Product Management, Salesforce](#)

Across all sectors, recruitment (and promotion) has traditionally been based on experience, education, and job titles. This outdated approach often overlooks qualified candidates, particularly in the fast-changing technology sector. [Only 40% of U.S. workers actually have a four-year degree](#), so companies that insist on degree requirements are limiting themselves massively.

Forward-thinking companies [such as IBM and Accenture](#) have begun removing degree prerequisites for many roles, widening their talent pools and ensuring that candidates are evaluated based on meaningful, measurable criteria: skills (and potential skills). Beyond filling vacancies, this approach enhances productivity, efficiency, and equity in both hiring and career development.

“Skills-based organizations are 107% more likely to place talent effectively, 52% more likely to innovate, and 57% more likely to anticipate change and respond effectively and efficiently.”

– [Deloitte](#)



But you need more than just a mindset change to make the skills-based approach work.

The skills needed for tasks at work, in every industry, are changing. As those in the tech industry are only too aware: sometimes they don't even need human beings to carry them out. This new era isn't only about "updating your job descriptions" to reflect new needs – this is about fundamentally transforming how your job architecture, and work, is structured and designed, in order to ensure total agility.

[New data from LinkedIn](#) has shown that, perhaps unsurprisingly, "AI literacy" is number one in their list of fastest-growing skills that IT workers should be investing in to get ahead in today's world of work. Technical Documentation and LLM Application are also in the top 10, with "Confidential Information Management" in second place — showing the critical role of data protection and privacy in today's regulatory landscape. [The top five fastest growing "Engineering" skills](#) included Large Language Model (LLM) Development & Application and "AI strategy".

Roles are nuanced and changing; people are changing too. A skills-based approach powered by AI means future proofing your workforce.

“The skills gap continues to be the most significant barrier to business transformation today, with nearly 40% of skills required on the job set to change.”

– [World Economic Forum](#)

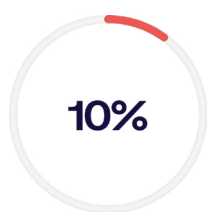
Technology organizations need a new approach, and appropriate tools, that can accommodate the nuance and dynamism of the work landscape.



How the skills-based approach works

Closing skills gaps in Technology works the same as in any industry – you need greater visibility of the gaps you have, and you need the right insights to understand whether “build, buy, borrow or bot” your way to closing them. Technology companies should be particularly well placed to see the importance of, and invest wisely in, tools to manage this data and execute on these connected insights.

UNDERSTANDING SUPPLY & DEMAND: BUILDING DYNAMIC SKILLS INTELLIGENCE



“While 85% of HR executives claim to be working on skills frameworks, only 10% say they are effectively executing them.”

– [Deloitte](#)

A skills-first approach asks us to look at jobs – and talent – in a new way, to really help pinpoint where there are shortages, growing gaps, or emerging opportunities.

To do this, you must move away from static job descriptions, and think about work in terms of skills needed. Your talent pool – sourced candidates, previous applicants, “talent community” members, existing employees, alumni and so on – can also be viewed as a collection of skills.

AI can be deployed to infer the skills needed for a role, and the skills someone has – including things they may never have listed on their resume – and build out skills-based profiles at scale. This gives you a consistent, accurate and normalized database you can query for every new requisition – and from which to build data-driven workforce plans.

All of this relies on a consistent, relevant skills framework for your organization that classifies and organizes workforce capabilities in a structured, standardized way. A robust, dynamic framework ensures consistency and interoperability across systems.



Formerly a costly and time-consuming endeavour, building out a dynamic job architecture – one that is customized to your organization – can now happen in just a matter of days.

This gives you actionable skills intelligence. AI helps visualize workforce skills supply and demand in real time, infer likely skills based on experience, and predict skill adjacencies to guide learning, mobility and redeployment.

Combined with external insights about the labor market – the skills that are fading or growing in popularity, where demand and cost is changing – this skills intelligence helps align hiring, internal mobility and training efforts with business needs, today and in the future.



“[It’s] going to be table stakes to have a talent intelligence platform as part of HR. The future is really putting them into a cauldron of skills matching, and then picking the best and the brightest with a skills-based approach that really does help reduce any sort of bias – to be your standard of how you recruit and grow your talent within the organization.”

Elin Thomasian

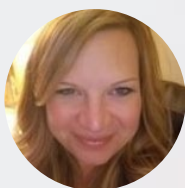
VP, Global Head of Talent Acquisition, UKG



CLOSING THE GAPS: SKILLS MATCHING WITH AI

AI is the secret sauce in making the skills-based approach work. The right AI can quickly structure and normalize job and talent data; it can infer the skills someone is likely to have or a job is likely to need, even when it's not explicit in a job description or resume; it can also suggest where people have potential to add a new skill and have skill “adjacencies”.

AI can pinpoint gaps, and suggest the best tactic for closing a skills gap. It can shortlist candidates at the touch of a button, and update the shortlist based on a change to the skills requirements. It can even help teams decide where to open new locations.



“Our skills-first hiring strategy required us to effectively connect the dots between various job grades and profiles. We recognized the opportunity to leverage AI technology to enhance our talent calibration process, ensuring that we attract and identify candidates whose skills align more closely with the specific requirements of the roles we are hiring for.”

Angela Athas

TA Partner: Sourcing Strategist, Flex

With the right skills intelligence in place, technology firms are (particularly) well placed to operationalize the skills-based approach to talent acquisition, talent management, and workforce planning. In other words, they are set up to close critical skills gaps – at scale.

Shifting to an AI-driven, skills-first approach helps HR teams to make better decisions about hiring, planning and outsourcing – plus the all-important upskilling and reskilling that will be essential for a fast-changing industry.

It also makes it possible to share personalized job or training recommendations (at scale), encouraging ideal candidates to apply and – more importantly for the tech industry – helping guide existing talent towards the learning and development opportunities that will set them up for future success.

Skills intelligence delivers the win-win scenario for employers and employees: providing data-driven career paths, mobility opportunities and training courses that prepare your workforce for the future, while helping you retain and empower employees to maintain and improve productivity levels.



“We talk about skills, but you tend to talk a lot about skills at the hiring stage... Actually starting to think about: what are the critical skills within your entire organization? Because if you then start to think about critical skills, you start to talk about critical roles. And I think that just starts to help you be much more planful and prepared for the direction of travel that your business is going through.”

Katharine Rooney

VP Talent Attraction & Acquisition, Mimecast

For example, if you are reducing headcount in one department, what transferable skills are you about to lose? Who has nearly all the skills required for a new type of role in your company? Are there network technicians who can be reskilled into cybersecurity and cloud engineering roles, because of their relevant knowledge of infrastructure?



The half-life of some technology skills is as low as 2.5 years, which could be further shortened by advances in gen AI. ([Harvard Business Review](#))

A skills-first strategy requires a strong commitment to continuous learning and development. This includes providing employees with access to online learning platforms, job rotations, and AI-driven personalized learning paths that match individuals with relevant development opportunities.



A note on ethical AI: questions to be asking

Of course, AI needs to be approached with caution. It needs to be fed with the right data: but talent data must also be kept secure, maintaining privacy and compliance, and ensuring no protected characteristics are used in the recommendation process.

- Do your HR technology vendors have the right checks and balances in place to ensure this?
- Are their AI models audited for bias?
- Is only the necessary data being fed into the models?

As well as data privacy, you need data quality. Ensuring you have a single source of truth for the AI to work on is key. Connected skills intelligence (about people and about jobs) represents the ideal foundation for a more dynamic and effective approach to acquiring, managing and retaining talent.

- Do your HR tech solutions speak the same language, and speak to each other?
- Are integrations seamless and safe?
- Can you unlock nascent value from your tech stack, with solutions that enrich and connect data rather than adding another silo?

Finally, transparency and explainability is paramount.

- Can users of AI-powered tools see why a recommendation was made?
- Is it clear which factors were taken into account, and to what extent?
- Are humans kept in the loop at key stages, to ensure AI is never “making” a decision?

AI in a skills-based environment is about empowering people: giving HR teams the insights to make more informed decisions, and then take on a more strategic role in a workplace that is undergoing unprecedented change.



THE TECH PLAYBOOK FOR CLOSING SKILLS GAPS

STEP 1: DIAGNOSE YOUR SKILLS GAPS WITH REAL-TIME INSIGHTS

- Conduct continuous (not one-off) skills assessments across your workforce.
- Use AI-driven skills intelligence to map current capabilities against future needs.
- Identify adjacent skills: where employees can transition with minimal training.

Top Tip: Invest in an AI-powered skills platform that integrates with your HRIS, LMS, and talent marketplace.

STEP 2: CREATE A UNIFIED SKILLS DATA ECOSYSTEM

- Centralize skills data across HR, recruitment, and L&D systems.
- Standardize skills taxonomies to enable skills-based hiring and internal mobility.

Top Tip: Use a connected skills intelligence system that integrates with Workday, SAP, and learning platforms.

STEP 3: RETHINK HIRING – FROM CREDENTIALS TO SKILLS-BASED TALENT ACQUISITION

- Redesign job descriptions to prioritize skills over degrees & job titles.
- Utilize AI-driven talent matching to widen the pool and identify non-traditional candidates.
- Expand recruitment pipelines through fintech bootcamps, universities, and partnerships.

Top Tip: Implement ethical AI, structured skills assessments and blind hiring practices to reduce bias.

STEP 4: BUILD A SCALABLE UPSKILLING & RESKILLING STRATEGY

- Offer modular, AI-personalized learning paths in key areas (AI, cybersecurity, cloud computing).
- Provide on-the-job learning opportunities through project-based reskilling.
- Enable cross-functional mobility so employees can shift roles within the firm..

Top Tip: Create skills-based career pathways with clear internal mobility options. AI can help you do this at scale.

STEP 5: LEVERAGE EXTERNAL TALENT AND ALTERNATIVE WORK MODELS

- Tap into freelancers, contractors, and external talent networks to fill immediate gaps.
- Use skills-based workforce planning to align hiring locations with talent availability.

Top Tip: Use an AI-powered talent CRM that can accommodate both internal and external talent.

STEP 6: EMBED SKILLS INTELLIGENCE INTO WORKFORCE & SUCCESSION PLANNING

- Develop real-time, dynamic workforce planning rather than static annual plans.
- Predict skills shifts using labor market data and internal workforce analytics.
- Design future-proof leadership pipelines for emerging roles outside of tech development.

Top Tip: Use AI-driven succession planning tools to identify high-potential talent.

STEP 7: MONITOR TRENDS & STAY AHEAD OF INDUSTRY SHIFTS

- Partner with universities and industry bodies to influence curriculum development.
- Advocate for government incentives around AI and digital upskilling.
- Embed external labor market insights into HR decision-making.

Top Tip: Use real-time market intelligence dashboards to track demand for emerging skills.



Benefits of the skills-based approach

Adopting a skills-based approach delivers significant benefits, beyond closing skills gaps more effectively and efficiently. It enhances agility and adaptability, enabling organizations to redeploy talent internally, respond to market changes faster, and innovate more effectively.

In addition to improving responsiveness, a skills-based strategy boosts productivity and performance. [Research has shown that](#) hiring for skills is five times more predictive of job success than hiring based on education, and twice as predictive as hiring based on work experience. By uncovering hidden talent and optimizing workforce capabilities, companies can improve efficiency and reduce hiring costs.

A skills-based approach also supports retention. Deloitte has noted that skills-based organizations are 98% more likely to retain high performers and to be recognized for strong career development programs.

[According to Mercer research](#), 72% of tech employees say their career goals can be met at their company, but career confidence plummets to 54% for employees with 1 to 3 years of tenure and drops again to 66% for employees with more than 10 years of experience.

Moreover, a skills-first model promotes diversity, equity, and inclusion – and thus power innovation and growth – by reducing biases associated with traditional credentials. [Eighty percent of executives believe](#) that hiring, pay, and promotions based on skills would lead to fairer outcomes and reduce workplace bias.

This approach expands access to opportunities for career switchers, non-traditional candidates, and underrepresented employees. This is supported further by the use of bias-audited, transparent AI tools in the process – ensuring the most skilled candidate is the one allocated to each role or task, every time.



How Beamery Helps

At Beamery, we help organizations in every sector implement a skills-first strategy, by providing AI-driven skills intelligence, tailored talent-related recommendations, and data-driven workforce planning solutions. Our platform enables organizations to gain real-time visibility into workforce skills, identify gaps, and build an agile, future-ready talent strategy.

- Get started with your own dynamic job architecture and skills framework in just 1 day.
- See up to 90% skills relevance on first review.
- Reduce job framework complexity by 97%.
- Reduce time to hire by more than 11 days.
- Reduce the time to identify best-fit candidates by at least 30%.

For one client, resurfaced hires – that is, talent found in the Beamery database – with a strong “skills match” were 270% more likely to get an offer (versus all other sources). Another client reported a 25% increase in performance for Beamery-sourced hires vs non-Beamery hires.



“Salesforce, like many other companies, is making the shift to be a skills-driven organization. Beamery allows us, with their AI tools, to look at skills... It allows us to really marry up the data that’s in the market and the skills that you need for certain jobs or you don’t have in-house.”

Andi Zyka

Director, Employee Success Product Management, Salesforce



The skills-based approach powered by Beamery gets you the right person in the right seat faster – and you're rewarded with greater performance. The skills-based approach powered by Beamery gets you the right person in the right seat faster – and you're rewarded with greater performance.

See how it works with a bespoke skills consultation

In an industry undergoing continuous transformation, tech companies must rethink how they attract, develop, and retain talent. A skills-first approach is not just a competitive advantage – it is essential for long-term success.

By embracing a skills-based approach powered by AI and richer data, organizations in any industry can close skills gaps, improve agility, enhance workforce productivity, and foster a more equitable workplace.



“Having the ability to know what skills you have in your company, the ability to then predict what skills you're going to need in the future, and filling the gap, is really how your company is going to grow or change or transform.”

Jacqui Canney

Chief People Officer, ServiceNow





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