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DATA BRIEF

EMERGING TECHNOLOGY SKILLS IN HR

QUICK BRIEF

This brief describes the current state of technology skills in HR, as captured from job postings for roles in HR over the last decade. The underlying job posting data comes from Lightcast, an analytics firm that collects and analyzes labor market data. In this brief, we will examine the current state of technology skills in HR, including artificial intelligence, as well as overall trends.

METRICS AND DEFINITIONS

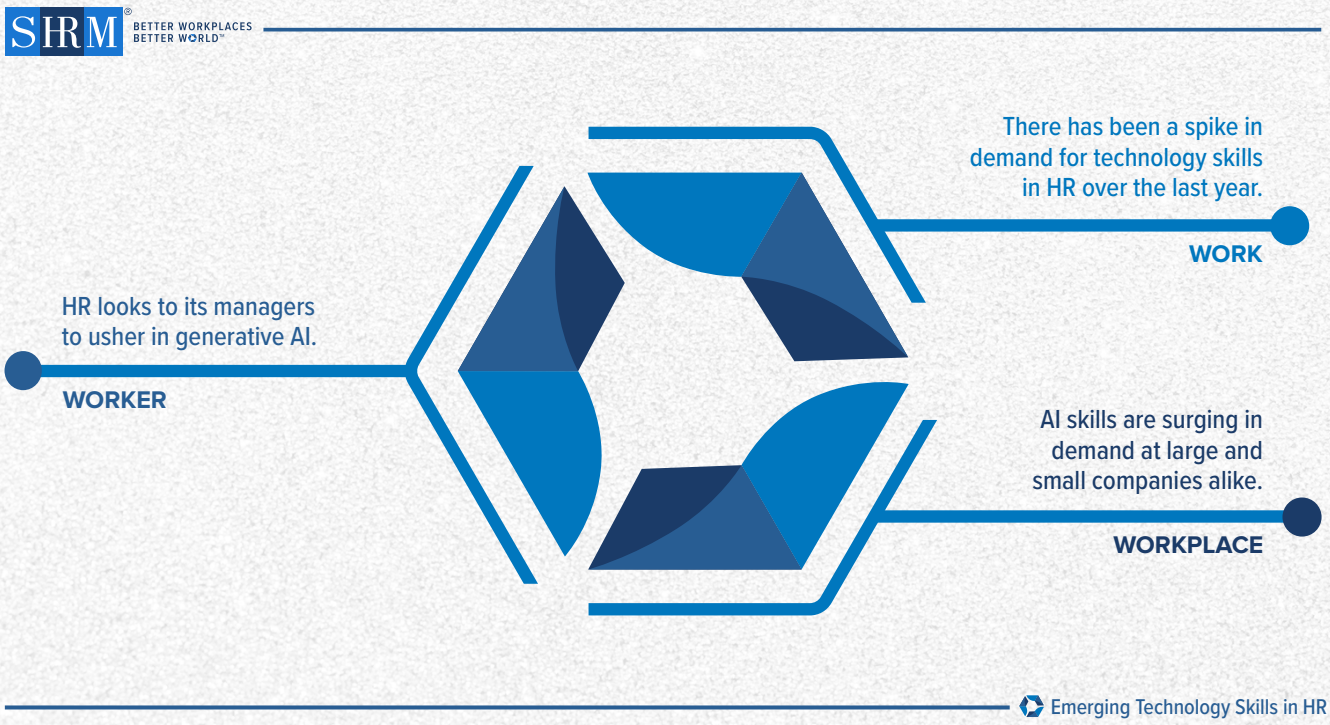
Job posting data provides a wealth of insights, capturing critical details such as job titles; companies; locations; posting dates; salary ranges; and required experience levels, skills, certifications, and education. We analyzed 3,911,292 unique job postings over the last decade that Lightcast captured from over 70,000 websites in the U.S.

Below are some key terms and descriptions of metrics that will appear in this brief:

Percentage of job postings: Over the past decade, the annual number of HR job postings has fluctuated significantly, ranging from under 3 million to over 6 million. To better understand the prevalence of specific skills and facilitate meaningful comparisons, we analyzed the percentage of job postings that mention a particular skill or skill combination.

12-month growth rate: To evaluate the growth in demand for specific skills, we analyzed the percentage of job postings that reference each skill over two consecutive 12-month periods. Specifically, for this report, we compared data from Q2 2024 to Q1 2025 against data from Q2 2023 to Q1 2024. This approach provides a clear measure of how rapidly certain skills are gaining traction in the labor market.

Estimated skill premium: The skill premium, as estimated by Lightcast, reflects how the inclusion of a specific skill in a job posting influences the stated salary range. This calculation evaluates whether certain skills drive salary increases or decreases within posted roles. These insights underscore the nuanced relationship between skills and compensation, offering HR professionals valuable perspectives on workforce planning and competitive pay strategies.



UNDERLYING DATA AND METHODOLOGY

Datasets: This report leverages Lightcast data aligned with the 2018 Standard Occupational Classification (SOC) system codes defined by the U.S. Bureau of Labor Statistics (BLS) for HR managers and HR specialists. For most analyses, we utilized a comprehensive dataset that includes all identified job postings. However, Key Finding 6 also draws on a targeted subset, focusing on the 50 largest and 50 smallest companies within the S&P 1500, categorized by market capitalization at the time of publication. The 50 smallest companies have a market capitalization from $300 million to $700 million. Additionally, Lightcast's skills data cover the 1,000 most frequently posted skills, providing a robust and detailed — but not exhaustive — perspective on the HR labor market.

Technology skills: For the purpose of this report, we classify "technology skills" as those that meet one of the following criteria:

- The skill refers to a specific technology (e.g., data visualization or human resource information system).
- The skill represents the output of a technology (e.g., predictive analytics or business intelligence).
- The skill is applied exclusively in conjunction with a technology (e.g., programming languages or automation).
- The skill is predominantly managed through technology (e.g., people analytics or resume screening).
- The skill is closely tied to one or more of the categories above within the current context (e.g., vendor relationship management or data-driven decision-making).

To ensure a focused and meaningful analysis, we excluded two outlying categories of technology skills from this report. These exclusions are based on their high frequency of demand and the long-standing nature of the products they involve. Specifically, we excluded:

- Productivity software (e.g., Microsoft Office, originally launched in 1989).
- Spreadsheets (e.g., Microsoft Excel and Google Sheets, launched in 1985 and 2006, respectively).

These definitions and exclusions allow for a more precise examination of technology skills relevant to the evolving HR landscape.

Average technology skill growth rate: When presenting charts that illustrate changes in the percentage of technology skills over time, we applied an averaging method to ensure clarity and precision. Specifically, depending on the level of monthly variation observed, some charts use a six-month average, while others employ a 12-month average for each data point. This smoothing technique is a widely recognized approach to minimizing visual noise that could arise from displaying individual monthly percentages. By reducing these fluctuations, the resulting charts provide a clearer view of overarching trends for technology skills in the workforce.

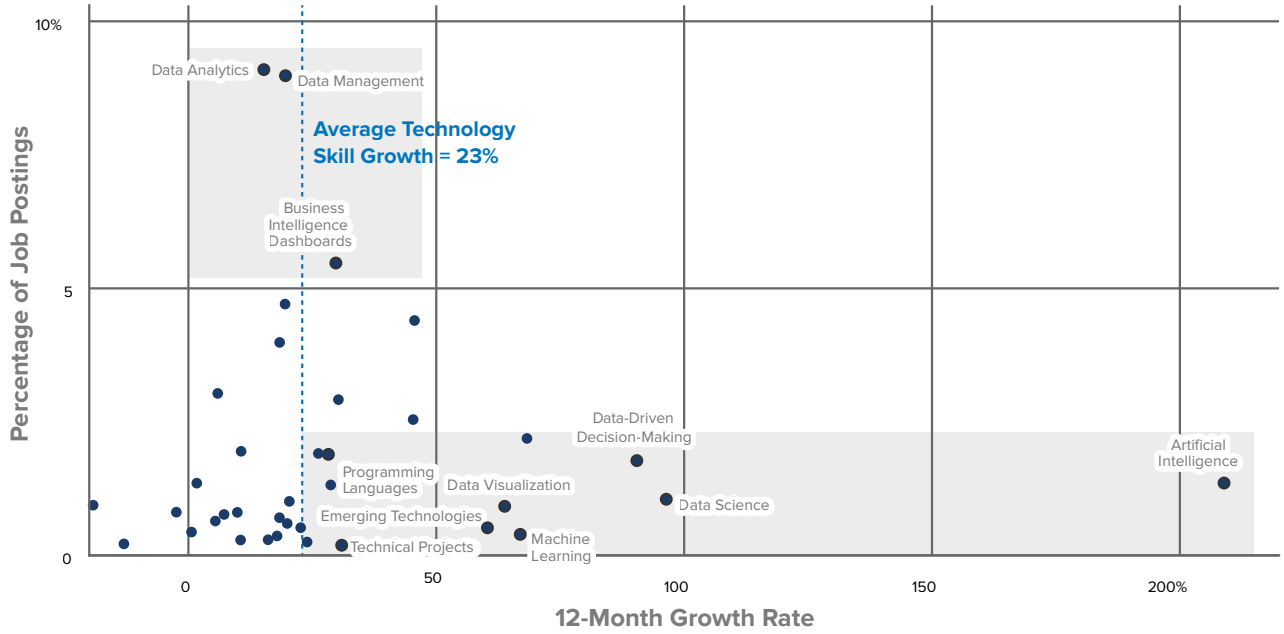
KEY FINDINGS OVERVIEW

1. Data in HR is here, and the move to data-enabled technology is approaching fast.
2. The growing demand for technology skills in HR leaves nontechnology skills behind.
3. HR professionals reap substantial pay gains with technology expertise.
4. A shift in focus within technology skills is redefining HR.
5. Demand for vendor-specific expertise is increasing.
6. HR in smaller companies is now hiring for AI, almost a decade after the largest companies started.
7. HR looks to its managers to usher in an AI disruption, again.

DATA IN HR IS HERE, AND THE MOVE TO DATA-ENABLED TECHNOLOGY IS APPROACHING FAST

HR Skill Frequency and Growth

Skills listed in HR job postings by the percentage of listings where they are found and their 12-month growth rate



EMERGING TECHNOLOGY SKILLS IN HR, SHRM, 2025. VISIT SHRM.ORG/RESEARCH TO LEARN MORE.
Source: SHRM analysis powered by Lightcast data.

HR has fully embraced the power of data analytics and the profound benefits it offers. What may have started as a small, specialized team focused on data has quickly proven its value, expanded in scope, and established itself as a core component of modern HR operations. This evolution (including data analytics in 9.1% of all postings in HR, data management in 9%, and business intelligence dashboards in 5.5%) has empowered HR professionals to incorporate data into their everyday discussions, backed by real-time dashboards that keep internal teams informed and aligned.

This foundational shift toward a data-driven function was more than an operational update, it was a vital first step in positioning HR for even greater transformation. With extraordinary speed, HR has enhanced its data sophistication and mastered a growing suite of technical tools, paving the way for new, cutting-edge capabilities. AI's 209% annual growth rate dominates this chart — and often headlines — but significant momentum lies in the development of predictive analytics (data science, 96%; machine learning, 67%), interactive data visualization (64%), and advanced technical expertise (technical projects, 31%; programming languages, 28%). Together, these advancements enable HR to make smarter, more data-driven decisions than ever before.

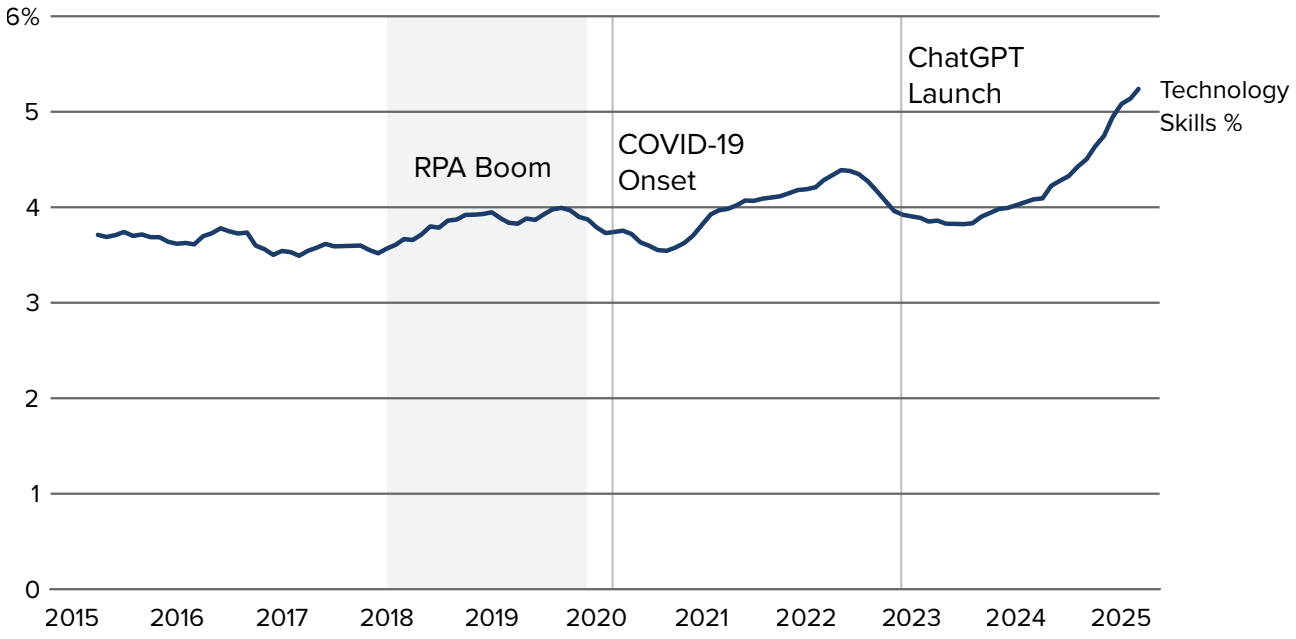
Takeaways

- Double-digit growth rates will rapidly move data-enabled technology skills from emerging to mainstream.
- To fully leverage the potential of current emerging technologies, HR functions must proactively prepare for a data-driven future by acquiring the necessary skills. Without this commitment, they risk losing influence and falling behind within their organizations.

THE GROWING DEMAND FOR TECHNOLOGY SKILLS IN HR LEAVES NONTECHNOLOGY SKILLS BEHIND

Monthly Percentage of Technology Skills

A six-month rolling average of the percentage of all skills posted in HR that pertain to technology



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Source: SHRM analysis powered by Lightcast data.

HR, the most human-centric function within organizations, is rapidly pivoting toward technology skills to amplify its influence and effectiveness. During the past year, technology skills averaged just 4.4% of all skills in demand, but that is a 23% surge from the previous year and 35% over the last two years. If this trend continues, the proportion of technical skills in HR job postings is projected to double every three years and surpass 10% by the end of the decade.

The current surge is noteworthy, and it follows a familiar pattern. The late 2010s brought a rise in technical proficiency as HR embraced robotic process automation (RPA) to streamline workflows. Similarly, after a brief decline in technical skill demand during the early COVID-19 pandemic, the subsequent reliance on collaboration software (such as Zoom, Slack, and Teams) and following hiring boom reignited HR's reliance on technology to address overwhelming talent demands.

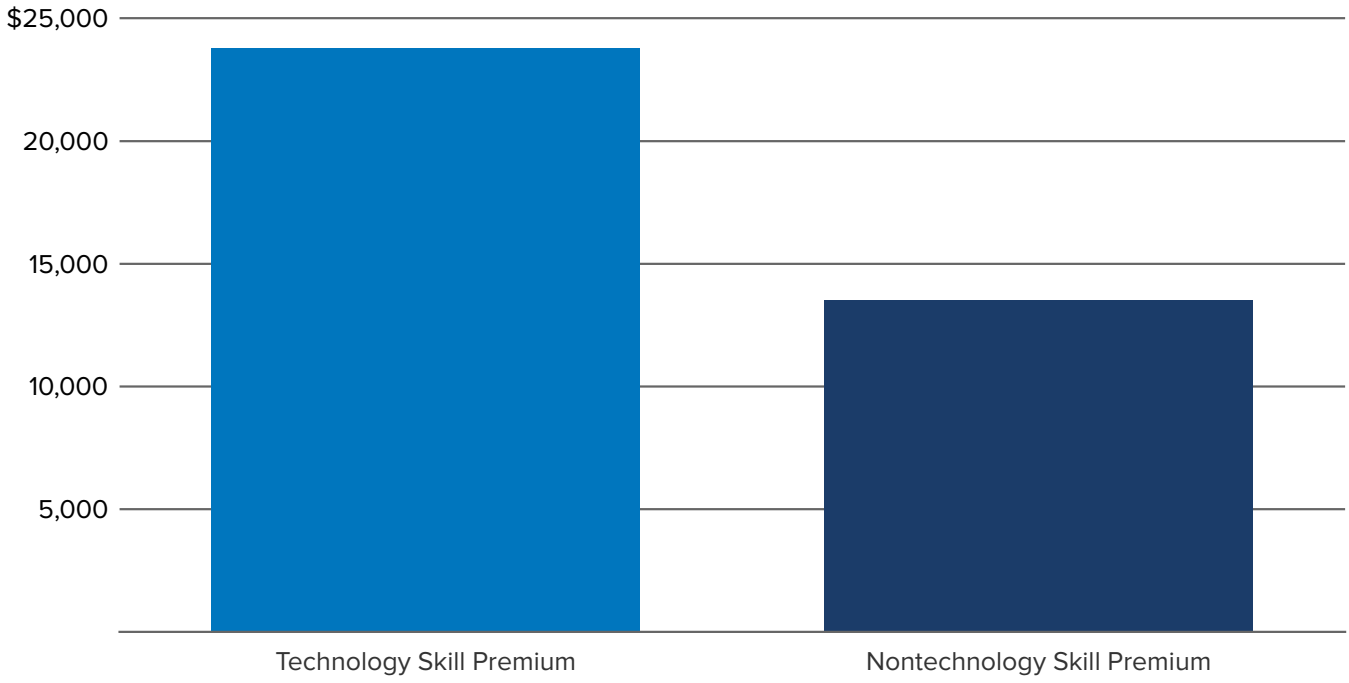
The last year's surge in technology skills coincides with a 1% average annual decline in demand for nontechnology skills, further underscoring the significant transformation underway in HR. Among the fastest-declining skills are benchmarking (-28%), student services (-28%), teaching (-26%), sexual harassment awareness (-26%), and call center experience (-25%). These shifts highlight HR's evolving focus and its steady shift toward becoming a data-driven, technology-enabled function.

Takeaways

- HR is quickly transitioning into a more technology-driven function. To keep pace and sustain impact, HR leaders must prioritize hiring and cultivating future-focused technology skills within their teams.
- Streamline your job postings by incorporating essential technology skills while removing outdated or nonstrategic skills that no longer align with your objectives.

HR PROFESSIONALS REAP SUBSTANTIAL PAY GAINS WITH TECHNOLOGY EXPERTISE

Average Estimated Premium Paid for Adding a Skill to a Job Posting



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Source: SHRM analysis powered by Lightcast data.

The rising demand for technology skills in HR is also driving notable pay incentives. Over the past year, HR roles requiring technology skills earned an estimated average premium of $23,775 compared to similar roles without those skills. By contrast, nontechnology skills saw an estimated premium of $13,499. This $10,276 (or 76%) gap in premiums highlights a strong incentive for HR professionals to prioritize developing technology skills.

Interestingly, this premium isn't driven by a few high-value outliers. The top premiums are often linked to leadership and executive capabilities, with only one HR technology skill (machine learning) ranking among the 25 highest estimated premiums overall. Yet, two-thirds of HR technology skills are among the top one-third of estimated premiums, commanding at least $20,992. Remarkably, the 20 fastest-growing technology skills in HR carry a premium averaging $39,885. To put that in perspective, for the top 1,000 skills analyzed, 71% were associated with a higher salary range, 1.4% were found to have no impact on salary, and 27.6% were correlated with lower stated pay.

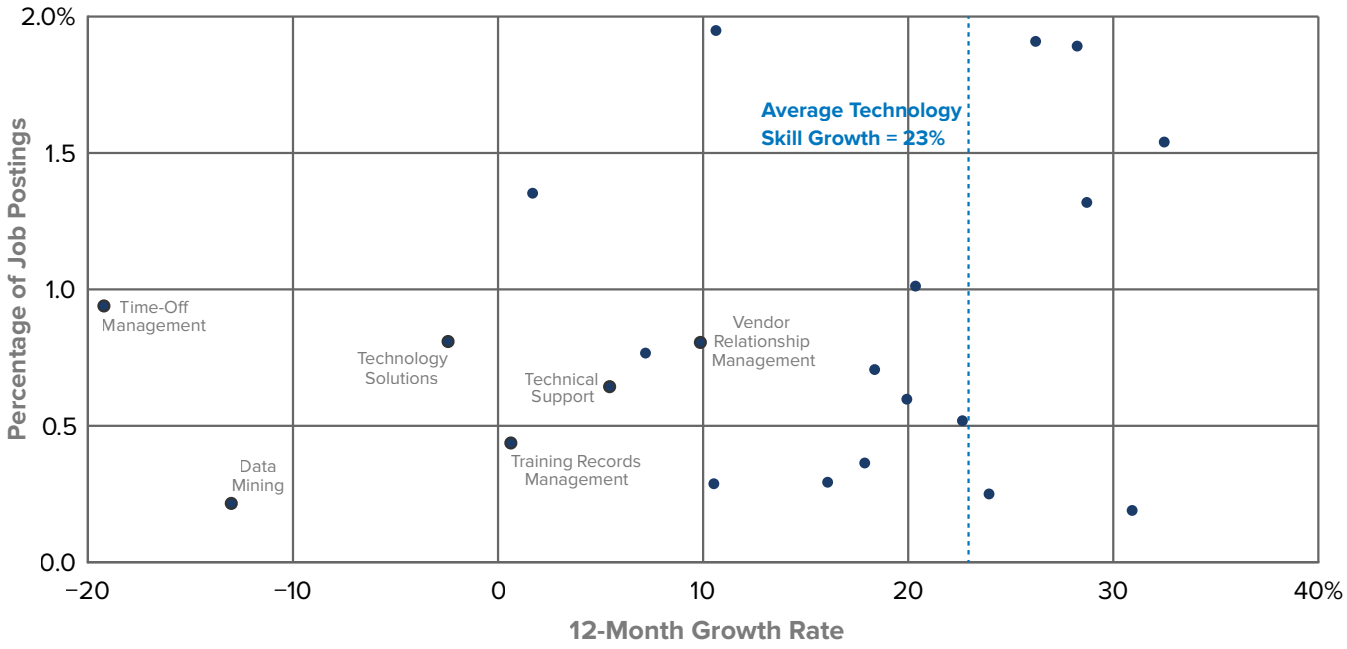
Takeaways

- The market is heavily rewarding HR technology skills. Leaders who do not support their employees' acquisition of technology skills risk losing employees to employers who do.
- Building technology skills internally is a practical and cost-effective solution for most organizations, because relying solely on external hiring could place unsustainable pressure on budgets.

A SHIFT IN FOCUS WITHIN TECHNOLOGY SKILLS IS REDEFINING HR

De-Emphasized Technology Skills in HR

Skills listed in HR job postings by the percentage of listings where they are found and their 12-month growth rate



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Source: SHRM analysis powered by Lightcast data.

The HR skills landscape is undergoing a profound transformation, with technology expertise advancing rapidly and leaving nontechnology skills increasingly outpaced. Yet, this growth is not uniform across all areas of technology. Administrative and support-related technology skills, such as training records management and technical support, are struggling to keep pace with the rise of higher-value technological capabilities.

And the decline in specific technology skills is driven by several key factors. For instance, terminology like “data mining” reflects tools and practices that have evolved into more advanced fields, such as predictive analytics and machine learning. Similarly, skills labeled as overly generic, such as “technology solutions,” no longer meet the specialized demands of today’s rapidly advancing workplace.

These shifts clearly signal a redefinition of priorities, with organizations increasingly valuing advanced, strategic competencies that propel innovation and meet the complex challenges of modern, technology-driven environments.

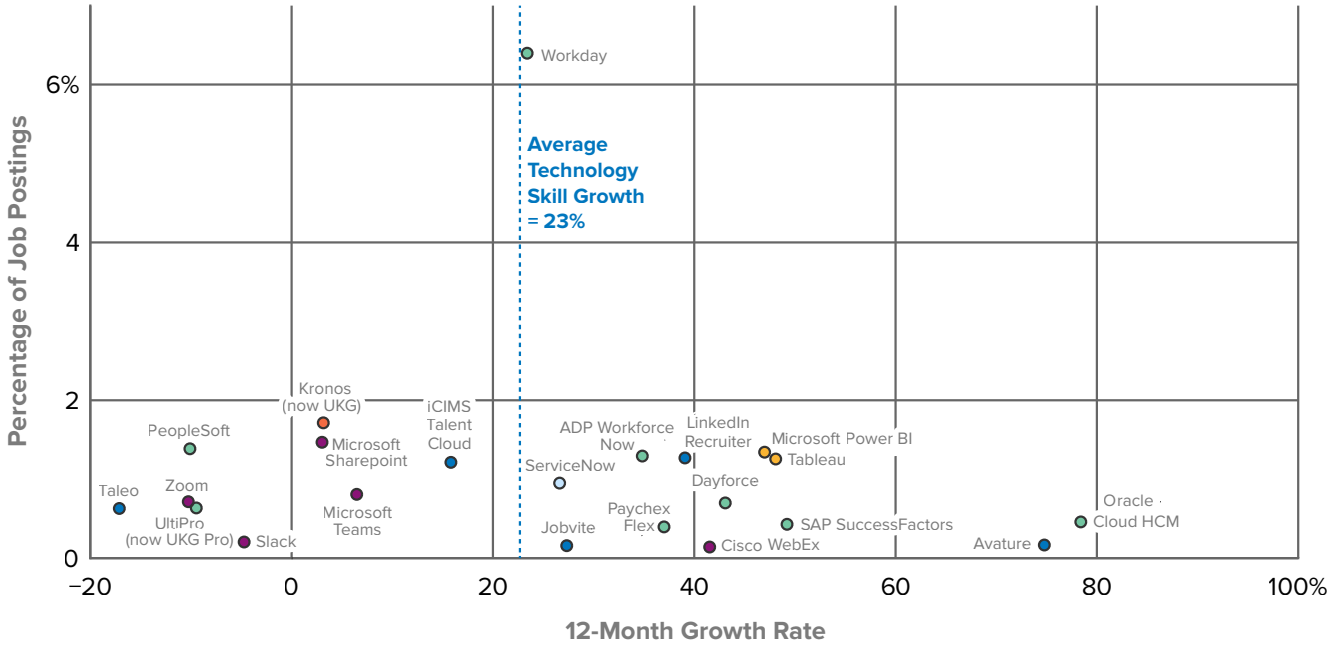
Takeaways

- By actively monitoring the application of technology skills, organizations can stay ahead of emerging trends and swiftly identify new skills that replace outdated ones, much like machine learning and data science replaced data mining.
- While monitoring new and emerging skills, HR functions must proactively retire skills that no longer propel their strategy.

DEMAND FOR VENDOR-SPECIFIC EXPERTISE IS INCREASING

Vendor-Specific Technology Skills in HR

Vendor-specific skills listed in HR job postings by the percentage of listings where they are found and their 12-month growth rate



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Source: SHRM analysis powered by Lightcast data.

HR job postings are increasingly emphasizing vendor-specific skills over general technology categories, signaling a shift toward precise and specialized expertise. Despite this trend, the use of legacy terminology (like Kronos or UltiPro) remains widespread, which could contribute to confusion in the marketplace as newer, more relevant terms gain traction. This inconsistency reflects the ongoing evolution of how HR professionals identify and communicate skill requirements in a rapidly changing technological landscape.

While most vendor-specific skills are experiencing above-average growth in demand, two major exceptions stand out. The first is collaboration and communication tools (such as Zoom, Slack, and Teams) that have become so integrated into the work environment that they are rarely highlighted anymore. The second includes software such as Taleo or PeopleSoft that has been de-emphasized by its vendors. Meanwhile, Workday remains the front-runner in vendor-specific demand, but its competitors' skills (such as Oracle Cloud HCM, SAP SuccessFactors, Dayforce, ADP Workforce Now, and Paychex Flex) are seeing faster growth, signaling a competitive and rapidly changing landscape.

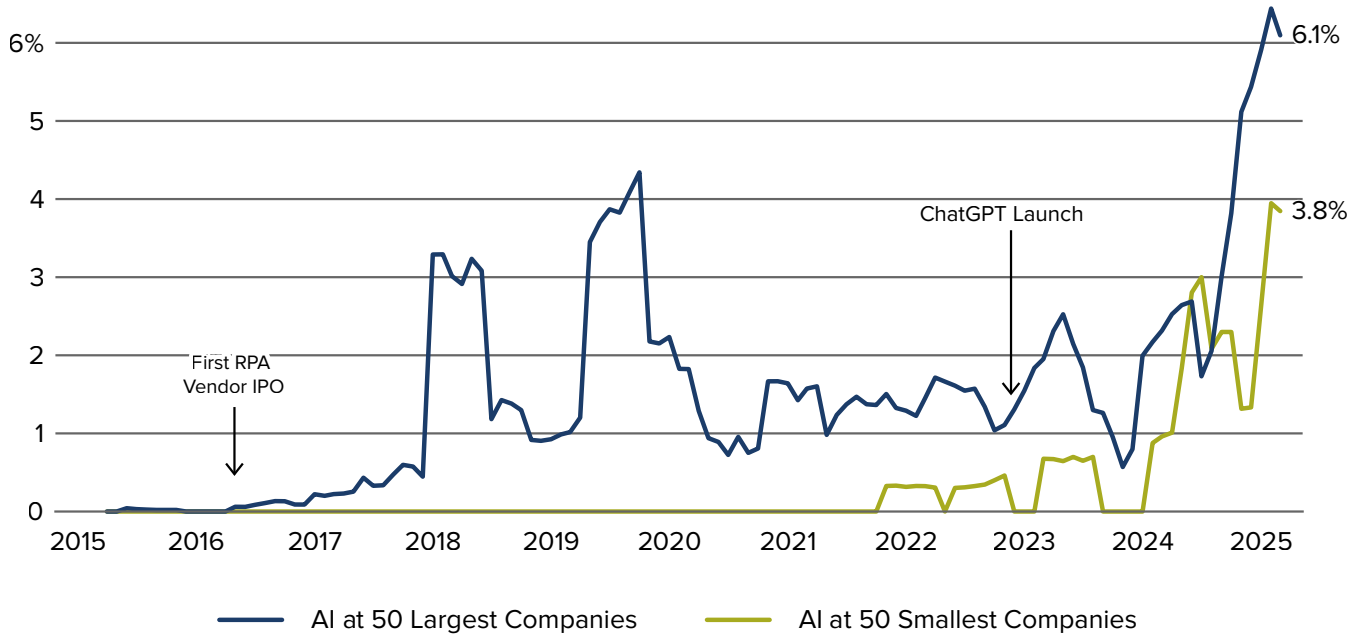
Takeaways

- When proficiency with a specific software vendor isn't a critical requirement, consider prioritizing the broader skill category and including all vendor-specific skills under that category. This strategy expands your candidate pool by attracting individuals who align their job search with the tools they know best.
- Before committing to a solution, evaluate not just the technology but also the availability of skilled talent capable of leveraging it effectively.

HR IN SMALLER COMPANIES IS NOW HIRING FOR AI, ALMOST A DECADE AFTER THE LARGEST COMPANIES STARTED

Percentage of HR Job Postings Looking for AI

The 50 largest and smallest companies in the S&P 1500



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Source: SHRM analysis powered by Lightcast data.

Over the past decade, HR functions within the 50 largest companies in the S&P 1500 began integrating AI expertise as part of their strategic workforce planning. This trend emerged primarily as organizations sought to leverage RPA to streamline operations. By 2018, just 18 months after the initial wave of hiring, AI adoption had gained significant traction, signaling HR's commitment to embedding advanced technology into its practices. A second, larger surge in AI hiring occurred in 2019, likely reflecting a new phase of adoption. Following this period, hiring levels for AI-related HR roles stabilized at approximately 1.5% of job postings until late 2022, when the introduction of ChatGPT sparked renewed interest. While 2023 saw a brief decline after an initial uptick, 2024 witnessed a dramatic increase in demand, highlighting a pivotal moment for AI in HR.

However, a contrasting trend was observed within HR functions at the 50 smallest companies in the S&P 1500. These organizations did not prioritize sourcing AI talent during the RPA boom of the late 2010s. This does not imply that smaller companies overlooked RPA transformations; rather, these projects were likely executed by external consultants or internal IT teams rather than led by HR staff, reflecting the advantages of scale available to larger organizations. There were signs of hiring activity for AI expertise shortly before and after the release of ChatGPT; the smaller companies only saw a significant surge in AI hiring in 2024. Notably, this surge matched the pace of larger organizations during the same period, suggesting broader adoption across the market.

Despite the trajectory of growth, a significant gap in AI adoption persists between the largest and smallest S&P 1500 companies. Interestingly, this disparity is not driven by the frequency of AI mentions within postings but by whether organizations are even seeking AI talent at all. Currently, more than half of the largest organizations actively include AI expertise in their HR job postings, compared to only a small fraction of smaller companies. With AI tools becoming increasingly accessible and scalable, this gap reflects a difference in organizational mindset rather than a limitation imposed by resources or scale.

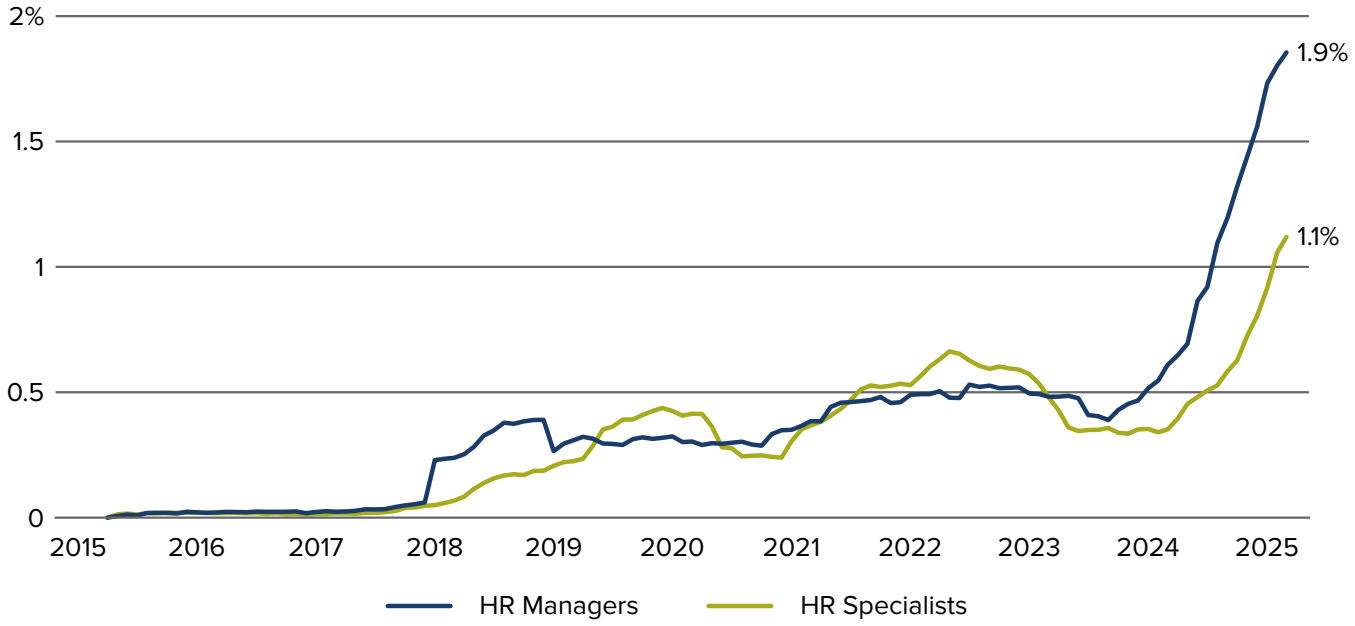
Takeaways

- Unlike earlier automation efforts with technologies like RPA that were mostly limited to larger organizations, generative AI (GenAI) enables HR teams in both large and small companies to adopt and innovate within their operations.
- With GenAI offering unprecedented usability and low technical demands, HR teams that have not yet begun hiring for AI expertise should prioritize strategies for initial adoption to remain competitive.

HR LOOKS TO ITS MANAGERS TO USHER IN AN AI DISRUPTION, AGAIN

Percentage of Job Postings Looking for AI Skills

Skills listed in HR manager and HR specialist job postings by the percentage of listings where they are found



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Source: SHRM analysis powered by Lightcast data.

RPA did not arrive with the instant disruption of ChatGPT, but its early use of AI brought meaningful improvements to processes in its niche applications. HR's AI hiring strategy began in early 2018 with a focus on managers, giving them the tools to lead before expanding capabilities through AI-trained specialists 18 months later. This cautious integration strategy allowed organizations to adapt effectively to RPA's limited but impactful potential.

Less than a decade later, HR faced the challenge of adopting GenAI, which promised an even broader impact. After ChatGPT's launch in November 2022, AI-related job postings initially declined for about 10 months as companies evaluated their potential in HR applications. Once planning was complete, HR rapidly moved to hire managers (in September 2023) and then specialists (in March 2024), reflecting a more streamlined adoption process influenced by experience with disruptive technologies. However, unlike RPA's more-targeted use cases, GenAI's wide-ranging potential means its story will unfold with greater complexity and speed.

Takeaways

- To maximize the impact of GenAI, begin by thoroughly equipping your managers to lead the transition before scaling efforts across the broader HR function.
- As AI evolves, prioritize the development of managerial expertise, enabling leaders to confidently guide their teams through the complexities of AI-driven change.

CONCLUSION

Over the past decade, the HR function has evolved significantly, integrating data and analytics into its core practices. This integration has not only driven progress but also positioned HR leaders to better address the technological advancements shaping the workplace. With the rapid emergence of sophisticated AI, many tasks are undergoing complex transformations, requiring HR to adopt a continuous learning and development mindset as a standard practice rather than an occasional initiative.

The ability to track and prioritize essential skills, alongside understanding the pace at which those skills can be acquired, will distinguish top-performing workforces from the rest. By staying ahead of these trends, HR professionals can ensure their organizations remain adaptive, competitive, and prepared for the future of work.

RELATED SHRM RESOURCES

- There's Still Time to Revolutionize HR with AI
- Jobs at Risk – U.S. Employment in the New Age of Automation (Part I)
- CHRO Priorities and Perspectives
- Revolutionizing HR with Generative AI

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