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Technology Skills Insights report

Site reliability engineer

Q2 2023

Welcome to the second edition of the Technology Skills Insights report

A letter from Josh Haims, Cloud Enabled Workforce Offering Leader

Greetings, and welcome to the second edition of the Technology Skills Insights (TSI) report.

The TSI report is designed to offer perspective on in-demand skills and emerging trends transforming the technology workforce. These reports track skills and capability movement that can inform conversations within your organization about how to best access, develop, retain, and advance the engineering workforce experience.

Our aim with this quarterly publication is to deliver information that is valuable to help seasoned technology executives, HR professionals, or junior engineers starting out in their careers.

In this issue, we offer insights into the role of site reliability engineers (SREs), including the important skills they possess and the value they provide with reliability engineering—a critical work outcome in modern cloud architectures. As highlighted in our [2023 Tech Trends report](#), “To win the battle for talent in the long term and prepare for further changes to come, organizations should be prepared to eschew IT orthodoxies and prize flexibility as the best ability.” As with [full stack developers](#) last quarter, SREs truly exemplify this tenet. We asked Nick Merizzi and Aniket Bandekar to collaborate on this issue to make sense of what the SRE role means from both technical and workforce perspectives. It’s critical to focus on both work application and talent when designing your future path. One will not succeed without the other.

Moving forward, the TSI report will help drive the agenda that matters to you—building and maintaining the engineering workforce that will fuel your growth, focused on the skills and roles that will be key to success.

Enjoy the summer, and we will be back with the next edition in early fall.



Josh Haims

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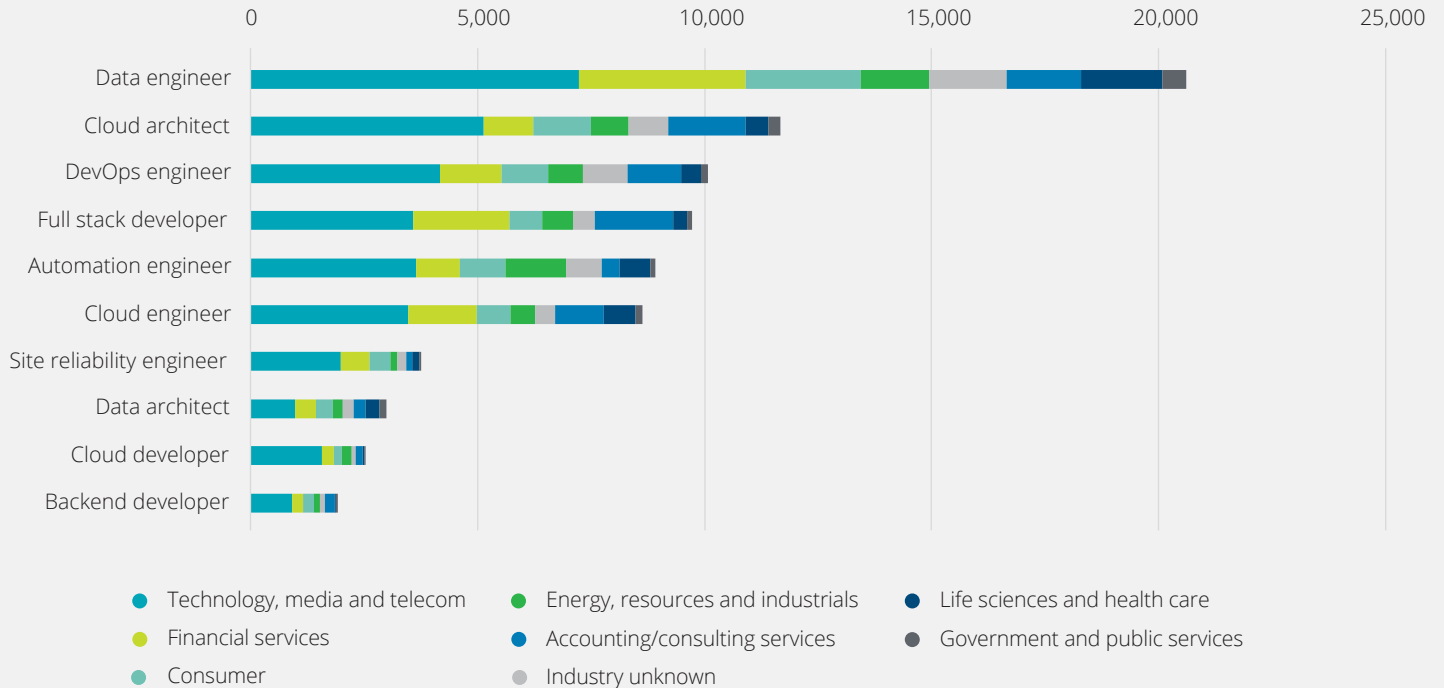
Talent spotlight: The site reliability engineer

Resiliency has become top of mind for many organizations, as platforms and systems have grown in complexity. Companies' tech stacks are undergoing significant modernization and are being retooled. Navigating this interim state of bridging both old and new systems, combined with having to take the workforce into consideration, is at the forefront of current organizational challenges. Not only is it critical to keep up with emerging technology, but also it's important to ensure an organization has the right roles, skills, and processes to operate, maintain, and sustain new tools and systems. For example, with the rapid advancement of modern artificial intelligence (AI) technology, companies face new opportunities

for embedding AI into larger systems. As a result, they must adapt to new vulnerabilities and ever-increasing risks associated with AI. Their tech talent must be prepared for AI and all the benefits and risks the organization will take on. It's in this space that having strong SREs can benefit an organization.

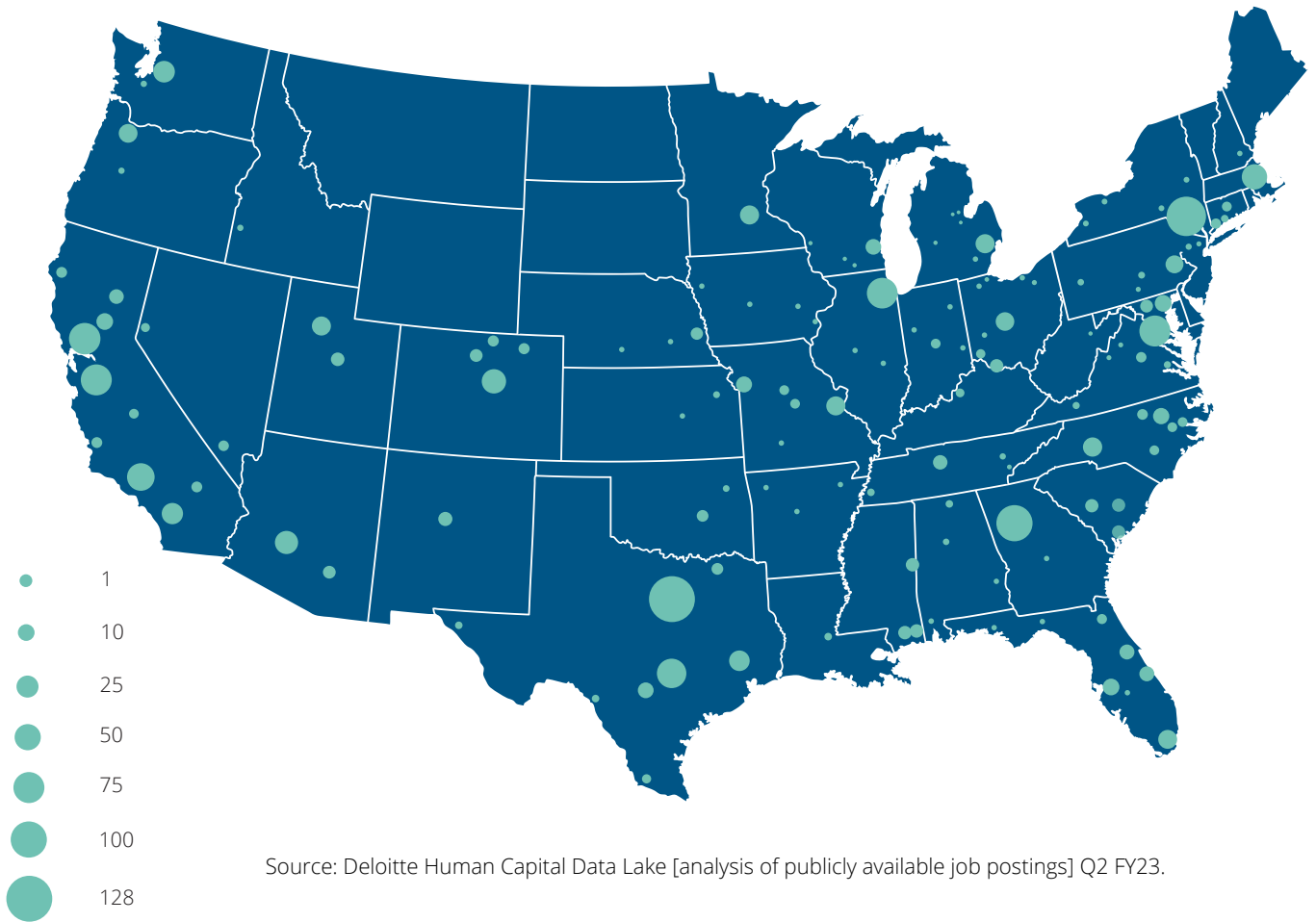
SREs apply a software engineering mindset and techniques to IT operations and environments. They are unique in that they are platform-agnostic and can look across multiple IT environments and pressure-test systems to understand operation instability and risk profiles. The demand for this skill set is on the rise.

Demand for role by industry: Q2 FY23



Source: Deloitte Human Capital Data Lake [analysis of publicly available job postings] Q2 FY23

US distribution of site reliability engineer demand: Q2 FY23



Source: Deloitte Human Capital Data Lake [analysis of publicly available job postings] Q2 FY23.



Deloitte leadership Q&A

Nicholas Merizzi, who leads the Resiliency practice at Deloitte, and **Aniket Bandekar**, a leader in the Tech Workforce Strategies practice, share their unique perspectives and experiences on organizations building the site reliability engineer role as a capability into work transformation and the corresponding talent strategies.

Why are organizations focused on building SRE capabilities now more than ever before?

NM: Complexity in environments is rapidly evolving, and modern applications are now highly distributed. In a world of microservices, product teams, and everything shifting left, we are now asking these same teams to do much more than rely on infrastructure that would hopefully not fail. Additionally, consumers expect that things should always be on and available. You have so many forces at play. This makes for a perfect storm for SREs to step into. SREs bring resiliency to the forefront and shift the culture from being reactive to proactive. It's now about the engineer who proactively detects an issue before it causes havoc.

AB: There is a lot to consider when building out the SRE team within an organization. Building an SRE team isn't just about adding system administrators or firefighters. They're proactive system designers and strategic reliability maintainers who work hand in hand with developers. Technical chops matter, but so do communication and collaboration skills. Leaders must redefine their operational vision, considering people, policies, platforms, and cloud transformation timing to effectively strengthen their SRE capability. Start by looking at the work and how it's changing. From there the skills can be defined, and those outputs can inform your learning and recruiting strategies in addition to revised career paths and job architectures that account for the emerging role's importance and complexity.

What are some unique skills and characteristics companies should look for in an SRE?

NM: SREs need to be empowered to go beyond a user journey, focusing on understanding and looking through the whole system. Traditional support engineers are focused on their specific systems and are mostly reactive, whereas SREs have a sense of curiosity and experimentation. They apply experiments to complex systems to understand what their breaking points are. They need to be able to challenge the norms and rethink

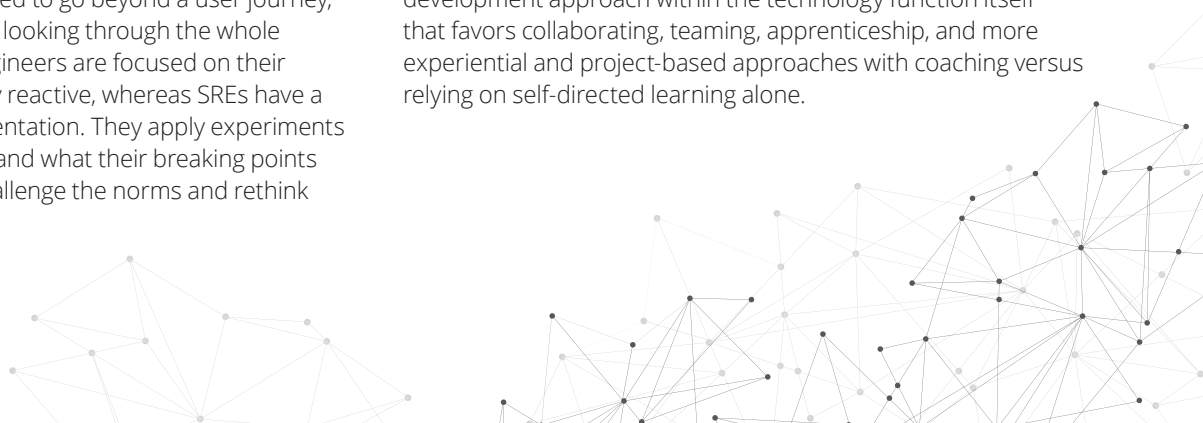
problems. They are passionate about finding new or better ways to do things to improve operational efficiency, whether it's bringing automation, reducing latency, or improving response time.

AB: In addition to the diverse technical skills, SREs need to develop interpersonal competencies including problem-solving acumen, effective communication abilities, and a capacity for adaptability in a fast-changing environment. Additionally, proficiency in crisis management and an aptitude for risk assessment are critical for ensuring reliability and efficiency in the role.

What makes SREs hard to find?

NM: Principal engineers are elite engineers and are at a premium in the market; they are in high demand. What differentiates SREs from the everyday engineer is their breadth and depth of capabilities. They are considered "T-shaped," meaning they can go deep in multiple areas but can also go broad. This contrasts with typical engineers who tend to be domain experts in a single area. SREs need to go beyond just the coding and hard skills; they need to use a business lens and look at the entire customer journey to understand where and how the journey might fail.

AB: Developing T-shaped skills requires continuous interdisciplinary learning, strong collaboration, communication skills, adaptability, and problem-solving abilities, and SREs often benefit from mentorship or coaching. Typically, these are not skills and behaviors expected from your operations engineers. These factors usually make talent attraction for the role challenging and retention much harder. To build and sustain these skills, organizations may be required to reexamine their learning and development approach within the technology function itself that favors collaborating, teaming, apprenticeship, and more experiential and project-based approaches with coaching versus relying on self-directed learning alone.



Because they are considered principal engineers, what does the career trajectory look like for an SRE?

NM: Most successful SREs are not driven by rank and level but by an inherent sense of curiosity and a strong internal desire to solve complex challenges. Their passion and motivation is often associated with going after the next big problem. When I think of the trajectory, I think of engineers going from operations to senior operations roles to SREs to distinguished engineers. What we're seeing in industry are tracks for engineers to become technology fellows or distinguished engineers, but after they achieve those very senior levels, their passion remains the same: "How do I go after the most complex systems that we have in our environment, and how can I make them better and more resilient?" We're also seeing SRE roles be introduced in a rotational capacity, where engineers are being hand-picked to embrace the SRE role for a duration of time; this enables organizations to scale SREs and to exercise resilience thinking.

Do you see this role evolving in the next three to five years?

NM: Yes. We are just scratching the surface! Platform and application environments are getting more complicated, and the emergence of AI is adding more questions—not fewer. The thousands of microservices today will turn into millions tomorrow, and that makes for a lot of distributed parts that need to talk together. When we think about operations and making systems more resilient in the future, how is AI going to play a role in that? How will SREs embed AI into the code? I think there are a lot of opportunities and a lot of considerable implications to unwrap.

AB: SREs will need to stay ahead of the curve. With the growth of AI and machine learning technologies, we can expect more tasks currently performed by SREs to be automated. That means it is very likely that SREs will spend more time designing, implementing, and overseeing these automated systems. This, in turn, will change how the traditional IT organization looks quite a bit!

As systems become more complex and integrated, SREs will need to develop a wider range of skills. In addition to technical abilities, they'll need strong communication and collaboration skills to effectively work with diverse teams.



Tech talent retention

- ✓ Provide the opportunity to be placed on highly coveted or challenging projects
- ✓ Keep them engaged on interesting programs and solutions
- ✓ Empower them to make impactful decisions and "own" an area or program
- ✓ Give them a platform to mentor junior colleagues on technical skill sets
- ✓ Reward significant technical accomplishments accordingly



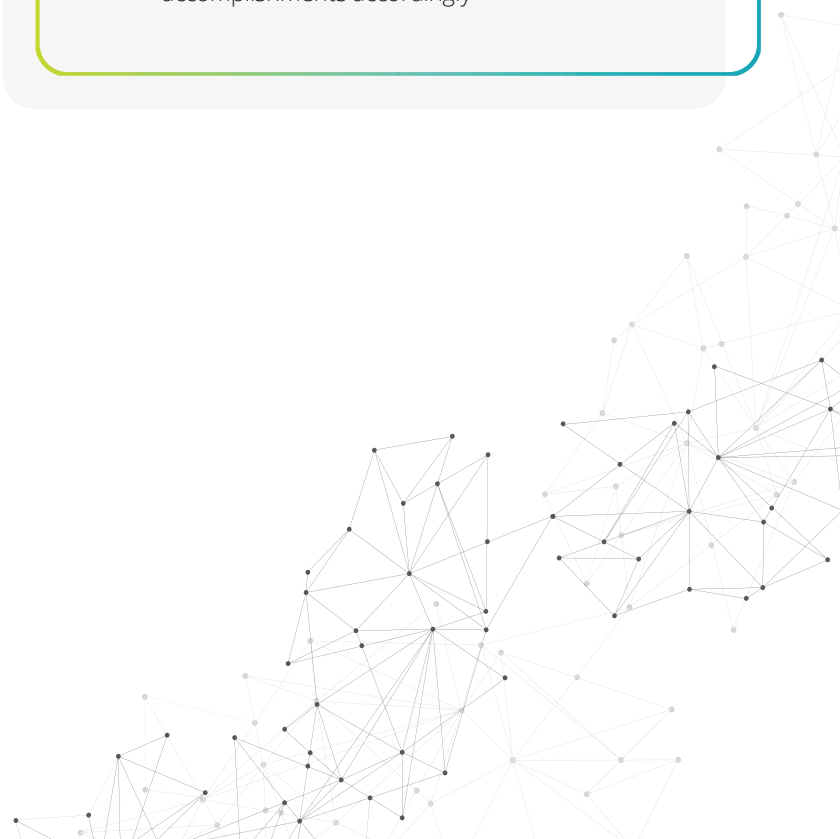
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Take a deeper dive

Interested in learning more? Explore our latest blogs, podcasts, and resources.

[DevOps, SRE, and the reliability life cycle](#): A blog post by Eric A. Marks, specialist leader, Cloud Strategy, Deloitte Consulting LLP.

[Full stack developer outlooks and trends](#): Full stack developers (FSDs) can deliver value across the organization, resulting in leaders across multiple industries fighting for the same talent. Learn more about what their future could look like in the next three to five years in the first edition of the Technology Skills Insights report.

[2023 Global Human Capital Trends](#): Discover how technology is enabling the shift from traditional talent models to workforce ecosystems.

[Deloitte Capital H blog](#): Our human capital blog, Capital H, offers insights and learnings on the changing nature of work and humanity's evolving role in it.

[Deloitte On Cloud podcast](#): Tune in as our two powerhouse hosts tackle the tough topics that can help you master today's fundamental shift toward the future of business and technology.



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