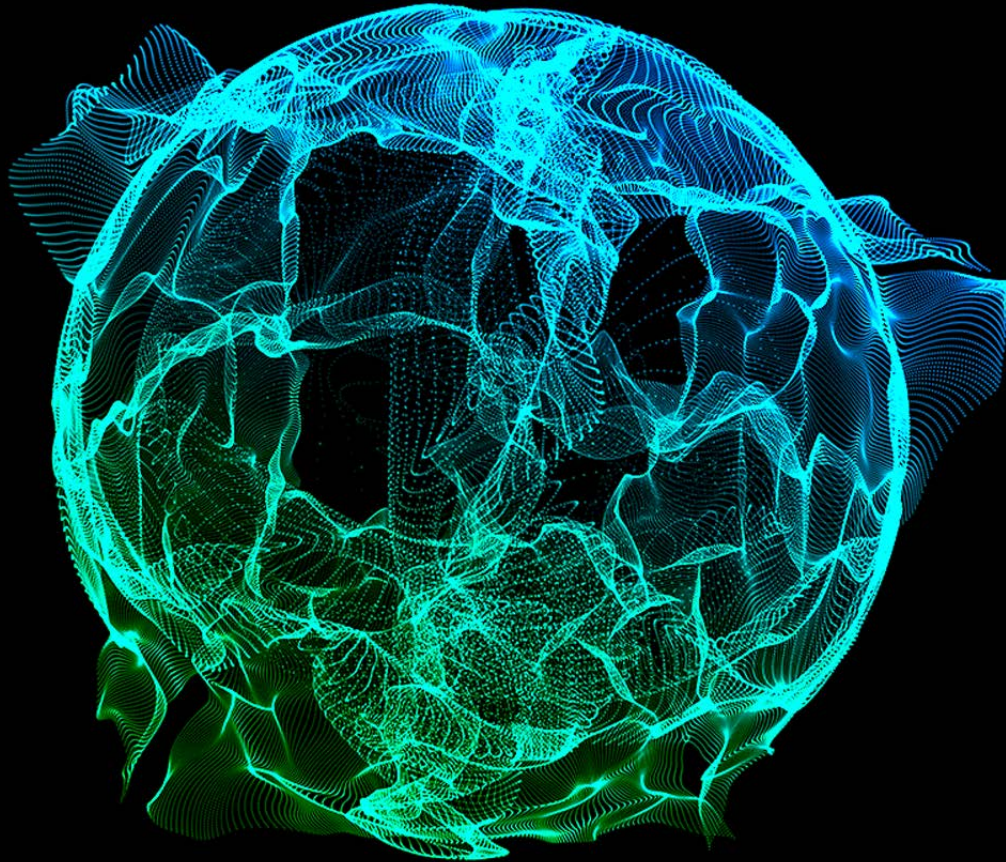


Deloitte.



Technology Skills Insights report

Cloud solutions architect

Q3 2023

Welcome to the third edition of the Technology Skills Insights report

A letter from Josh Haims, Cloud Enabled Workforce Offering Leader

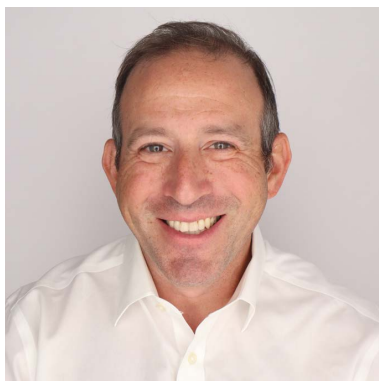
Greetings, and welcome to the third iteration of our Technology Skills Insights (TSI) report.

The TSI report is designed to offer our perspective on the technology skills that are in high demand and the emerging trends transforming the industry, as well as share impactful resources to enhance professional development.

Our aim with this quarterly publication is to deliver information that is relevant and valuable to help everyone from seasoned technology executives to those just starting out to cultivate and create the next phase of their careers. The report is also designed to track skills and capability trends that can inform your tech talent and workforce strategy. We hope this report will spark conversations within your organization about which skills and capabilities are most relevant to your continuously evolving technology strategy. Whether you are building products that are consumed or engineering products to work in your environment, there is something in the TSI for you.

This third edition of the TSI focuses on the cloud solutions architect (CSA) role. It delves into the unique skills of the CSA, highlighting their technical expertise and ability to bridge the gap between intricate business challenges and transformative cloud-based solutions. We invited Elizebeth Varghese and Lars Cromley to lend their insights into this issue from both technical and workforce standpoints. As the editor, I am committed to making sure we give equal weight to work applications and talent when charting your future course; one cannot thrive without the other.

Stay ahead of the curve with the TSI report and look out for our special edition coming in December on generative AI and the workforce.



Josh Haims

Principal
Cloud Enabled Workforce
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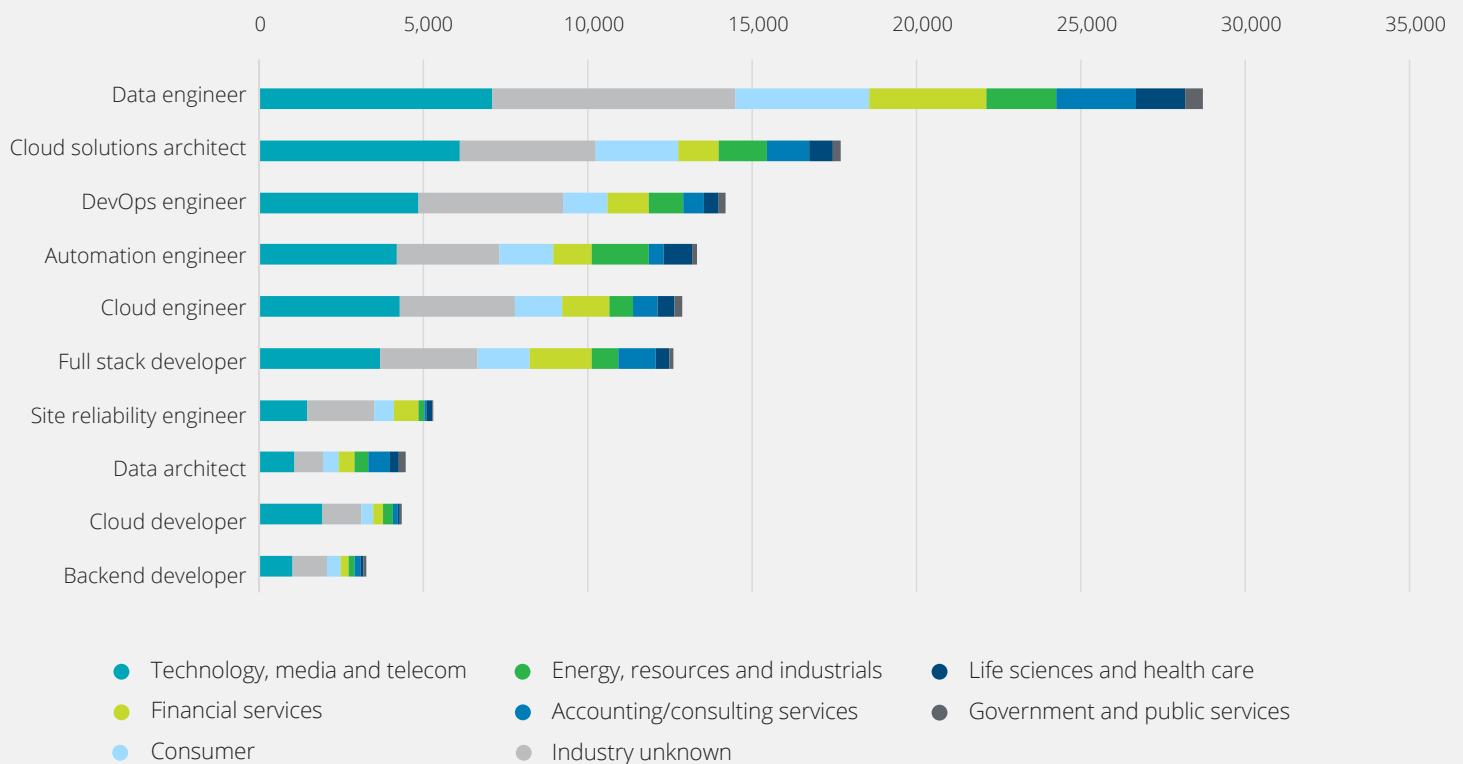


Talent spotlight: The cloud solutions architect

The cloud solutions architect (CSA) is a technical expert responsible for translating project requirements into strategic architecture that guides the path to a polished final product. Beyond technical expertise, CSAs act as adept navigators, skillfully bridging the divide between intricate business challenges and transformative cloud-based solutions. Collaborating hand in hand with an ensemble of tech professionals, including DevOps engineers and developers, the CSA orchestrates the integration of precisely tailored technologies, sculpting a digital landscape that resonates with efficiency and success.

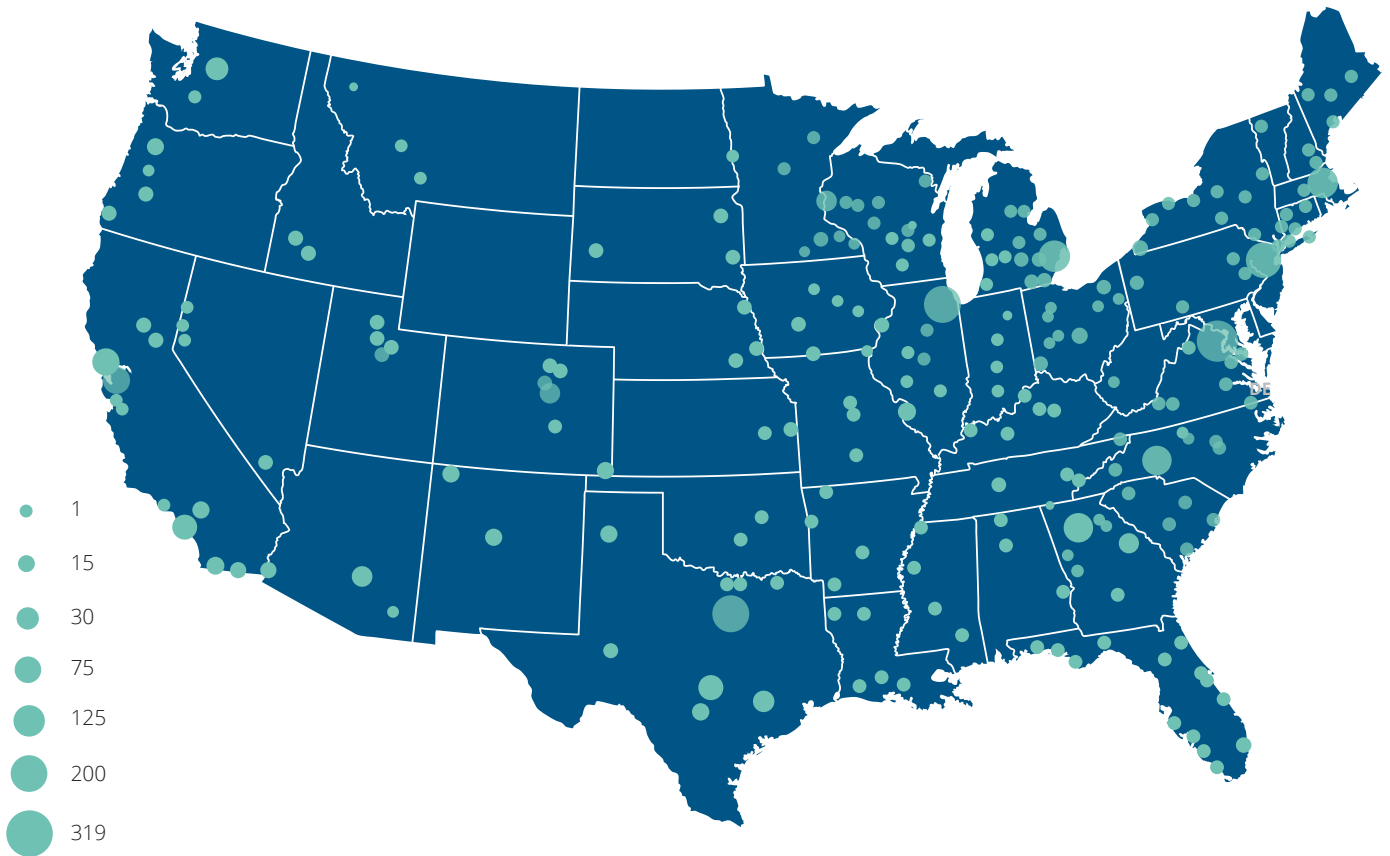
CSAs are expected to embrace a multidisciplinary outlook, acting as translators who convert the business requirements of non-technical stakeholders into technical blueprints. A solid grasp of the business landscape and a comprehensive understanding of consumer data risks become their guiding stars. Like our [previous issues](#), we met with two leaders on their perspectives around the CSA role and what they're seeing in the market.

Demand for role by industry: Q3 FY23

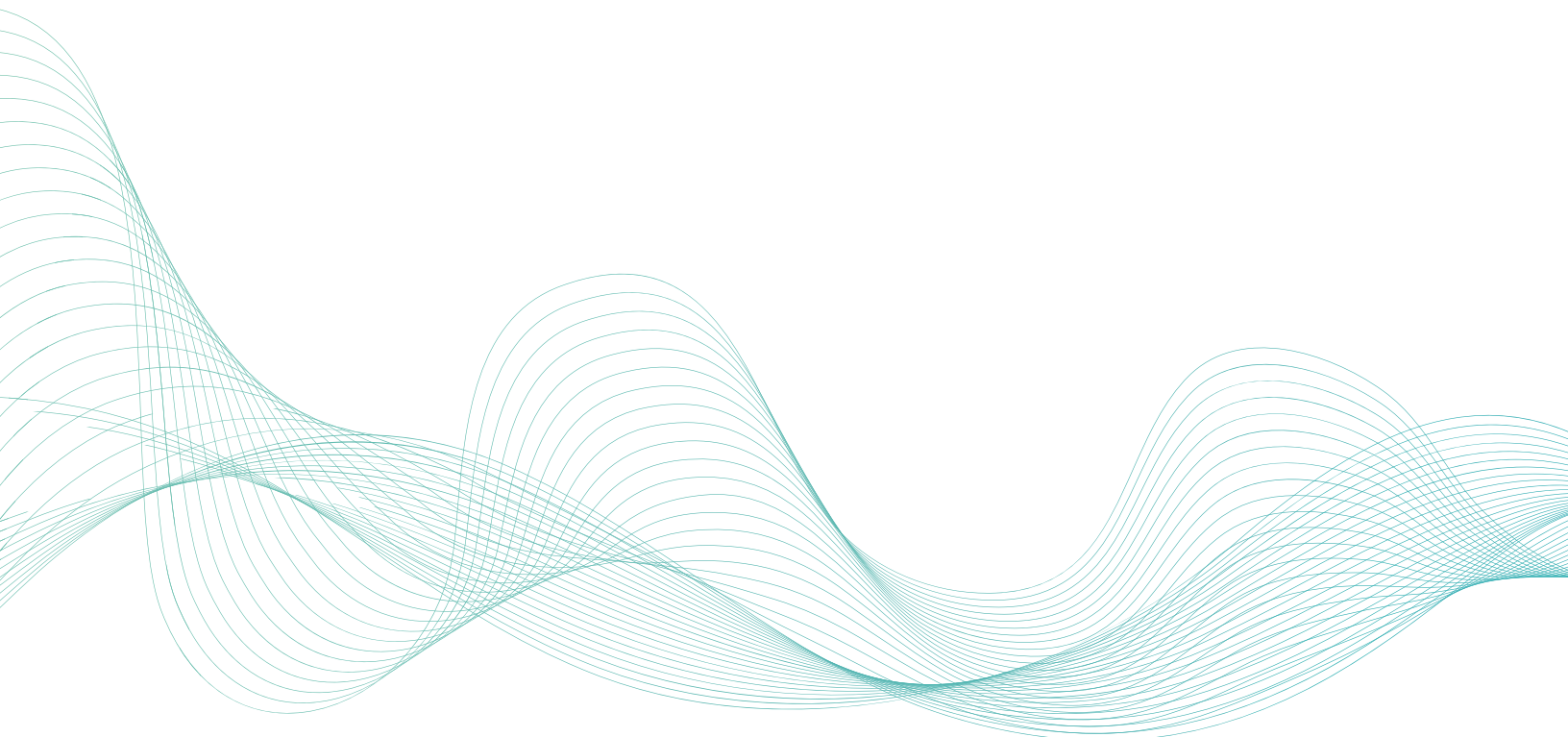


Source: Deloitte Human Capital Data Lake [analysis of available job postings] Q3 FY23.

US distribution of cloud solutions architect demand: Q3 FY23



Source: Deloitte Human Capital Data Lake [analysis of available job postings] Q3 FY23. Map based on longitude and latitude. Size shows run of count for geographic count across all roles.



Deloitte Leadership Q&A

In this third issue, **Elizebeth Varghese**, a principal and co-leader of the Cloud-Enabled Workforce practice, and **Lars Cromley**, a technology fellow and leader in the Cloud Engineering practice, provide their points of view into the evolution of the CSA role that requires a wealth of hands-on experience that stretches far beyond the confines of traditional certifications.

How does the CSA role differ from the traditional IT solutions architect role? Are there specific skills that are associated with cloud versus on-prem?

LC: There is a subtle distinction; it aligns more with a shift in mindset than a variation in skills. Certain aspects, such as networking, are not approached in the same manner when implemented in the cloud. The planning, functionality, and operation of networking in the cloud differ greatly compared to on-premises solutions. This is also true for security measures; the controls available in the cloud versus a private data center do not offer a one-to-one comparison. The mindset envisaged for a CSA is one of broader awareness, trending toward a more generalist perspective within the CSA field. As a CSA, there's an expectation to have a more comprehensive understanding, while typically, an IT solutions architect would delve deeply into a specific area. For instance, in the cloud environment, there wouldn't necessarily be a dedicated storage person, a networking person, and a database person. Rather, CSAs, traditionally trained as more full stack developers, aren't specialists in a single field but have the competence across each skill set.

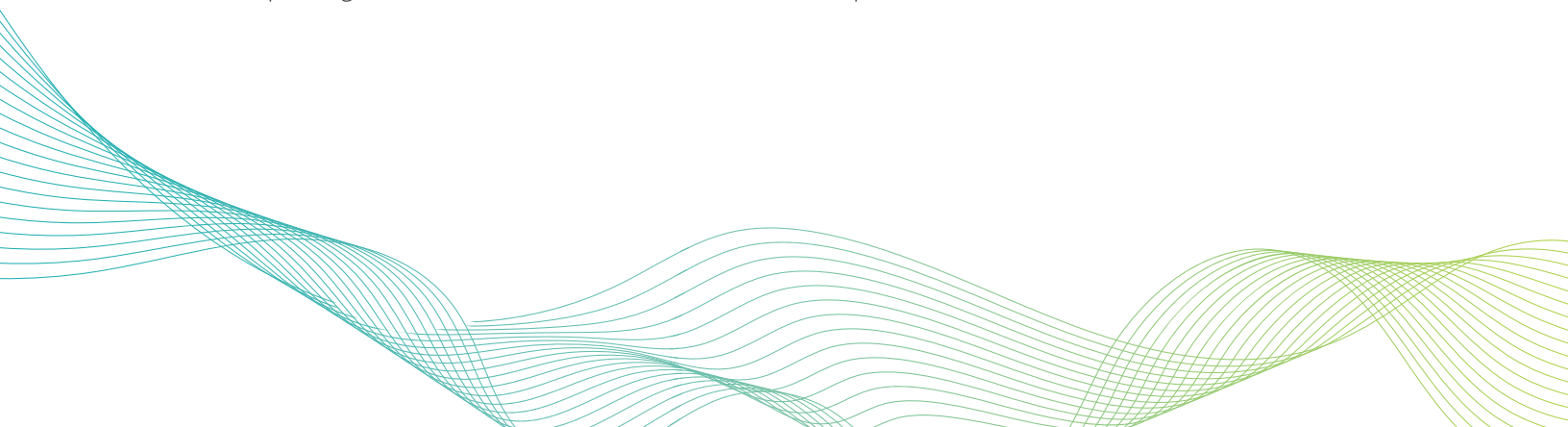
EV: To draw a non-technical analogy, I often explain that adopting cloud technology is akin to moving to a foreign country. Gaining a certification resembles receiving a visa stamp, yet it doesn't necessarily mean you have mastered the nuances of the new culture. The cloud introduces an entirely novel approach to various aspects, including server management, authentication, and server templating. There are unique tasks associated with operating in the cloud, and tasks carried out in

a non-cloud environment need to be adjusted, such as security measures and password management. This shift to the cloud is considerable, and many organizations encounter difficulties during the transition due to a lack of experience in building infrastructure, often leading to mistakes in live production environments. A common challenge we find is that clients underestimate the complexity of the cloud-based skill set relative to traditional IT roles, and this can lead to gaps in capability during transitions to a cloud-based architecture. We work across IT and HR executive teams to recognize this gap, mitigate the problem through reskilling, and help define a talent strategy for future growth.

Is it more effective for a CSA to be cloud-agnostic or do you think it would be better for a CSA to specialize in a specific cloud platform/provider?

LC: Specializing in one specific cloud platform is really a non-issue, as there are universal principles in cloud engineering that apply across all hyperscale cloud providers. Nevertheless, if you desire in-depth knowledge of a specific solution, specialization is typically required.

EV: In my opinion, the skills needed for working across the more prevalent cloud service providers are generally agnostic. There may be subtle differences specific to a particular cloud service provider, but we've generally found that if individuals are proficient operating in one prevalent cloud service provider's cloud platform, it is not exceedingly challenging for them to adapt to another.



What does career advancement or the next level look like for a CSA?

LC: Most organizations nowadays employ a leveling system for roles such as CSA, with designations ranging from level one to perhaps five, six, or even seven after which one may progress to principal or chief positions. For instance, your journey may begin as a CSA focusing on a particular client or customer. Later, you might be promoted to a solutions architect for a specific technology or domain, like serverless computing. Within this serverless area, there would be additional levels to ascend before reaching your ultimate goal of principal architect.

EV: I'm observing a trend where many CSAs are gravitating toward information security due to the challenges introduced by post-quantum computing and pervasive cybersecurity issues. I am seeing a lot of CSAs leaning toward infosec due to post-quantum computing and all the issues people experience with cybersecurity. Furthermore, financial operations (FinOps) have become a significant factor in managing cloud resources and investments as a means to acquire cost efficiencies and generate ROI. A good CSA understands the drivers of cost and deployment efficiency that will take them to the next level with a management skill set that drives high value.

How do you anticipate AI affecting this role?

LC: I don't foresee the focus of this role changing, but the methods of operation certainly will. People are apprehensive about how generative artificial intelligence (AI) will affect future work dynamics. If we consider the current trending technology for instance, generative AI could be asked to provide me with an AI-defined Terraform script comprising a public and private subnet that spans three availability zones, even detailing the region. The future hinges more on understanding how to utilize these tools and how they can enhance current operations. I believe that these evolving methods of work will not necessarily alter the role but will enhance them.

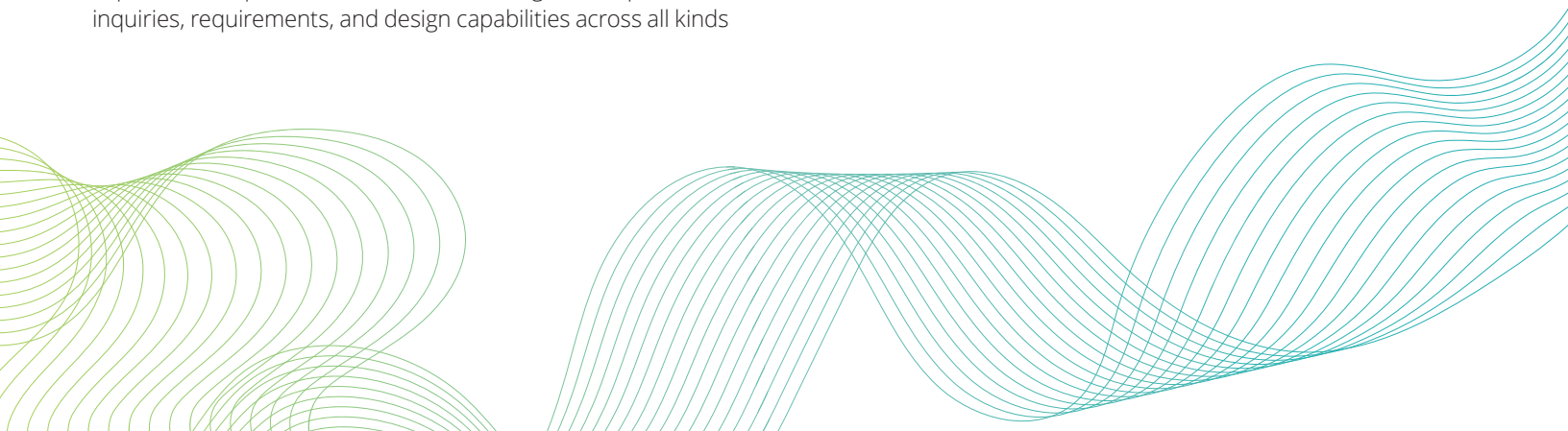
EV: AI can aid in optimizing tasks and managing transactional activities across numerous job roles, not just for CSAs. Whenever there is a robust body of established knowledge, AI can be particularly beneficial. As this knowledge base continues to expand, I anticipate that we'll see AI assisting us with processes, inquiries, requirements, and design capabilities across all kinds

of technical and non-technical skill sets. I believe it's only a matter of time before we witness its impact in the CSA domain.

How can businesses improve the acquisition, retention, or upskilling of CSAs in today's tech talent environment?

LC: It's crucial to stay closely involved with the actual work; one cannot merely be a theoretical architect. I believe that in companies with a solid policy around contributing to open-source software, allowing architects and engineers to engage in passion projects and play a vital role in community building, it is critical for leaders to support their work and give them the opportunity to enhance their skills and experiment. Minimizing friction in accessing tools, platforms, and resource access can significantly enhance the architect's experience. If obtaining something requires a formal request, it erodes trust, delays progress, and often turns security into an obstacle to innovation. A critical aspect of talent retention involves trusting intelligent individuals to do smart things and not impede their progress.

EV: Despite the prevalence of tech layoffs, sourcing good technical talent remains a challenge. A three-step approach can help alleviate this issue: sourcing talent, upskilling talent, and enhancing the value proposition for talent. Many of my clients are starting to reevaluate their sourcing criteria, with numerous organizations moving away from degree requirements and instead focusing on skill sets, thereby broadening the talent funnel. In terms of upskilling, we need to define "what good looks like" and figure out how to achieve that standard through learning curriculums or hands-on experience. We cannot always hire new talent to fill skill gaps; instead, we need to train people to meet the challenges posed by new technologies. Lastly, the value proposition needs reevaluation in a post-COVID environment. Traditional employee value propositions, like career maps or progression, no longer suffice. Factors such as remote work, diversity, skill acquisition, and people's aspirations need to be considered. It's essential to understand what people seek in their day-to-day jobs. Some individuals are perfectly content focusing on a project they enjoy and savor the learning experience it provides. Organizations capable of appealing to these short-term preferences will likely be key in retaining talent in the long term.



What else is essential for clients to know about the CSA that we haven't covered yet?

LC: It's important to understand that cloud solution architecture extends across multiple architectural practices. In my opinion, it requires considering the matter from various perspectives. The application, infrastructure, supporting organization, and necessary systems all demand careful consideration. Being a cloud architect isn't simply about focusing on the cloud—you need to be a solutions architect, focusing across these components, and have deep comprehension that encompasses all these facets. As a cloud solutions architect, you need to be capable of assuming the roles of a database architect or a software architect, among others. Recognizing this multiplicity of roles is crucial.

EV: In every industry, there are context-specific elements that need to be understood for success. For instance, if we were regulators, we would need to answer, "What does it take to develop good cloud solutions for this industry/company?" Simply assuming a certified individual can do this is not enough.

Another example is problem-solving or troubleshooting, which requires experience and a multidisciplinary perspective. When assembling a team, companies need to consider questions like, "Is this team agile?" and "Does anyone on this team have troubleshooting capabilities?" Organizations should strategize on how to bring together all the required skills and experiences and recognize these skills and experiences may not, and possibly should not necessarily, be centralized in one individual.



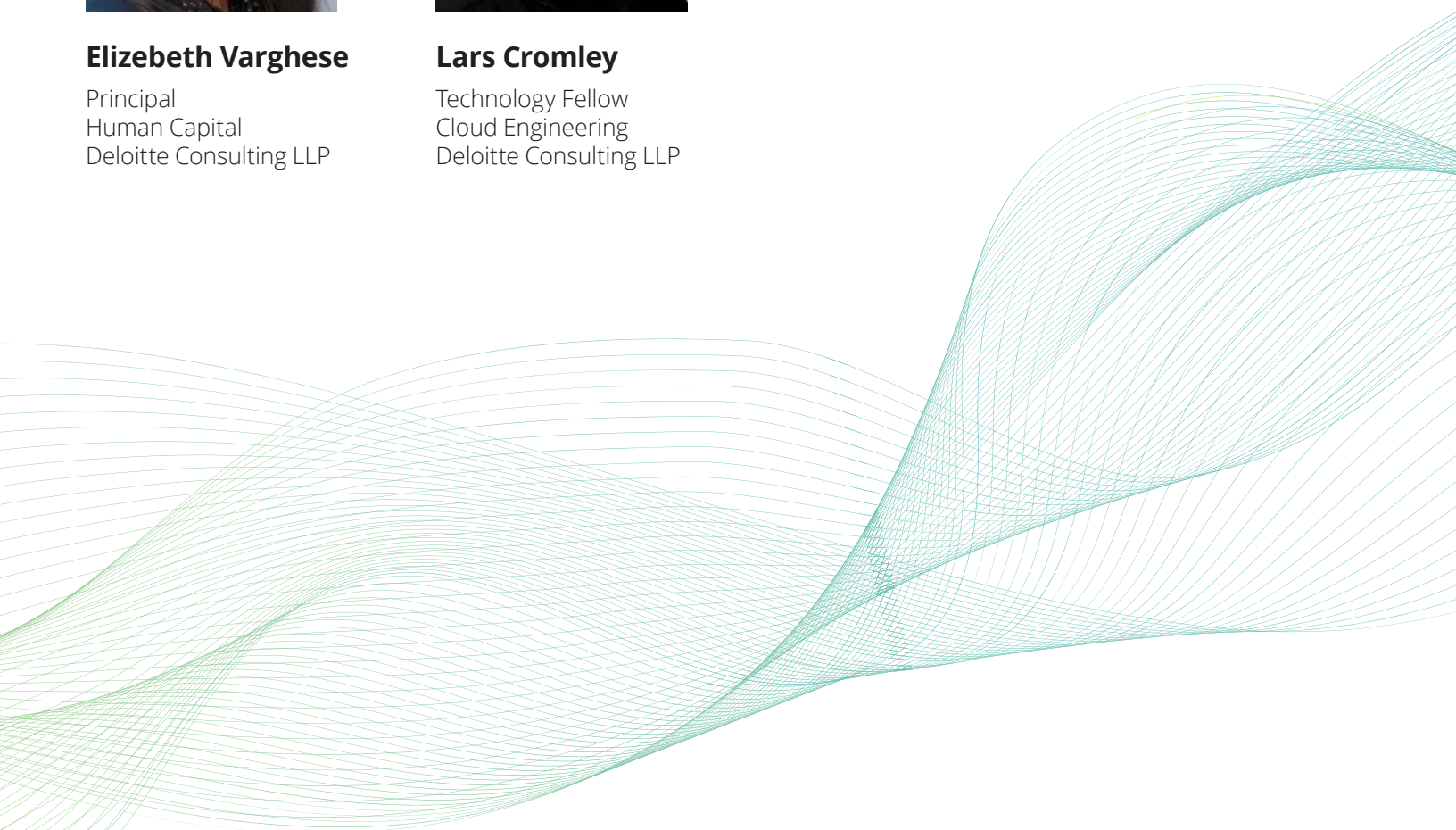
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Take a deeper dive

Interested in learning more?

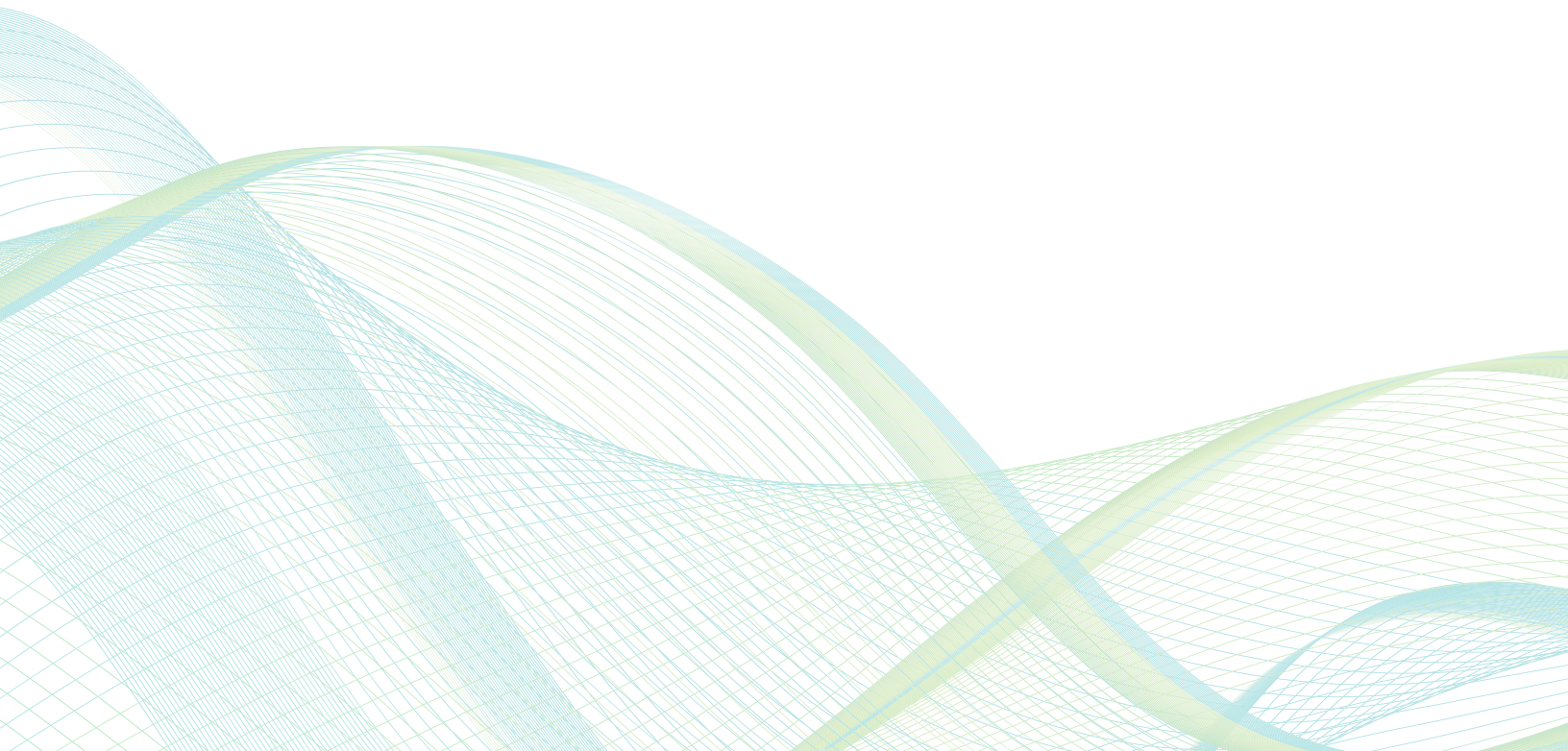
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