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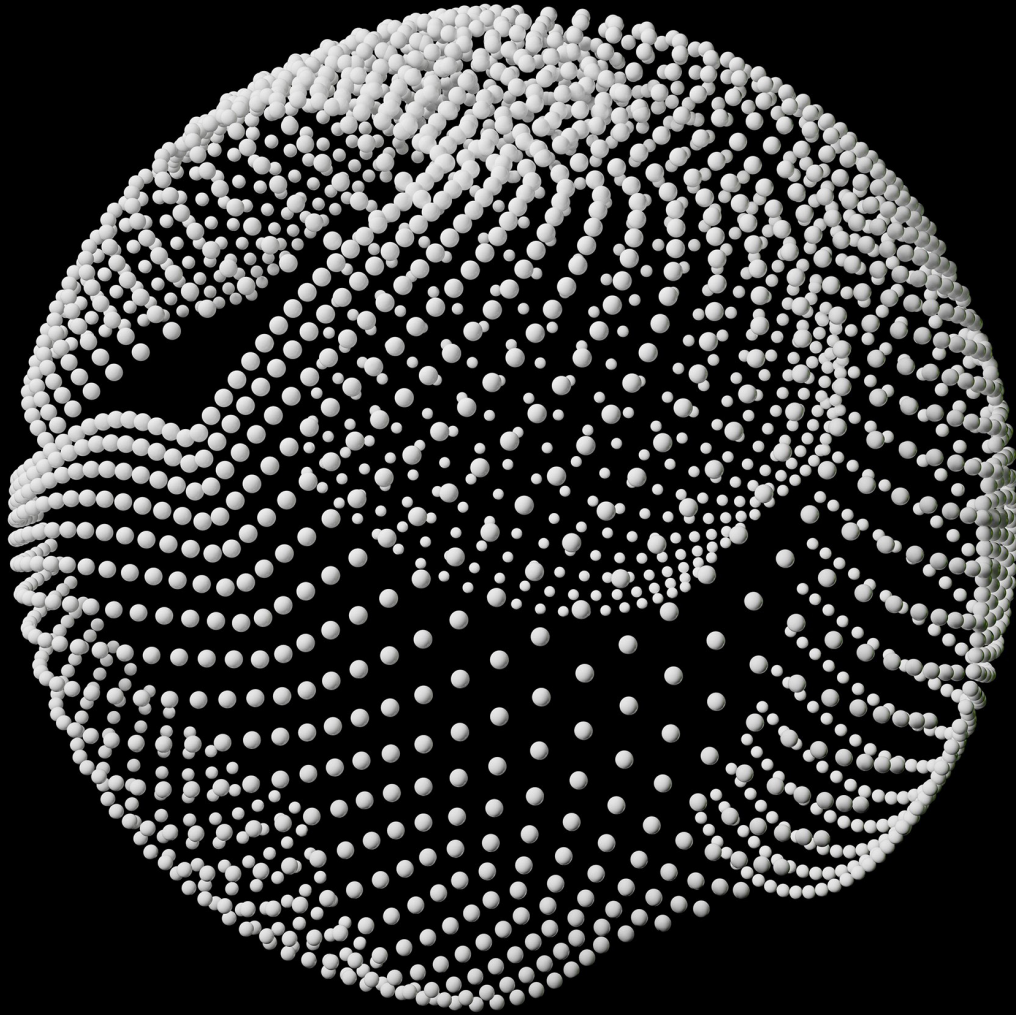
Software engineering nearshoring

Why now, where to start, and how to scale

Companies are increasingly considering nearshoring as a way to augment traditional on- and offshore models of providing software engineering capacity. Latin America, in particular, presents an attractive opportunity to acquire and scale engineering talent; however, companies will need to make important location, talent, and operating model decisions when evaluating their nearshoring options.

The case for international software engineering hubs

Software delivery is more globalized than ever before. Moving beyond the traditional use of offshore technology hubs to support internal IT and provide shared services, companies are increasingly relying on globalized models to drive innovation and new product development. Deloitte has been approached by clients across industries— including technology, financial services, biopharmaceuticals, food service, and retail—asking how they can extend their software product engineering teams beyond US borders to grow their talent footprint.

In an age where customers demand innovative new product features that require an ability to rapidly deliver high-quality software while maintaining a focus on margins, two macro trends are pressuring companies to look beyond current geographies for software engineering talent: 1) challenges accessing onshore talent; and 2) accelerated customer demand for digital experiences.

First, software engineering talent in the United States has been expensive and in high demand for a long time. The current median salary of a US software developer is twice as expensive as the global median salary for the same

position. Although approximately 95,000 software engineers have been recently cut by US tech companies, these same organizations have added about 875,000 jobs since 2019; meaning the layoffs represent only 10% of the broad workforce expansion over the past four years. Furthermore, cost pressures and an uncertain economic outlook are causing leaders to tighten business and IT operations budgets.

Still, more than 50% of leaders in a 2023 CEO survey said that investing in digital and technology capabilities continues to be a top priority. Moreover, finding cloud-native talent has been a challenge in the United States for more than two years; according to 2020 research, more than 90% of IT leaders plan to expand their modern software engineering and cloud environments, yet 80% say inadequate employee skills are holding them back. We have most recently seen clients dedicate international tech centers to specialized functions for improved automation and efficiency. We expect automation and process improvement to continue to be at the top of leaders' priority stack; engineering talent will be key for their success.

Second, customers are demanding enhanced digital experiences powered by software-based products and platforms across a wider range of industries, making technology capabilities core and foundational to their business. For example, in the quick-service restaurant industry, many companies are citing digital channels as a key growth driver. One American fast-food conglomerate recorded a 25% ($4.4 billion) sales increase from 2020 to 2021 from its brand applications and food-delivery partners; in 2022, digital sales represented more than 50% of the company's total revenue growth. Similarly, the fixed video surveillance industry has shifted from being hardware-centered to cloud-centered as users demand anywhere, anytime access to surveillance footage and analytics. In its Q4 2022 report, a leading video equipment and services provider reported that cloud and artificial intelligence (AI) are driving and will continue to drive growth, with an anticipated 25% year-over-year increase in software-related revenue. We expect the demand for digital experiences to continue to challenge new industries to build digital product teams.

The case for Latin America nearsourcing

The challenges of domestic cost pressures and limited talent supply, coupled with the growing demand for digital experiences, create an imperative for US companies to look internationally to support traditional IT functions and digital product development. Increasingly, there is an attractive option close to home: Latin America.

Recent macro trends are prompting US companies to consider Latin America (LATAM) as a favorable location to nearshore software development. LATAM is home to a strong and growing base of well-educated software engineers experienced in cloud-native technologies. The region's two largest markets, Brazil and Mexico, are currently home to more than 2.2 million software engineering professionals and are graduating more than 350,000 new engineering students every year. We have seen major international employers—including global technology, retail and consumer goods, banking, manufacturing, and automotive companies—take action to establish an engineering presence in LATAM markets such as Mexico, Colombia, Costa Rica, and Brazil. These employers are seeking cloud-native talent ranging from full-stack developers to more niche skill sets such as machine learning (ML) engineering. Recruiting process outsourcer CodersLink reports that more than 50% of engineers in

Mexico qualify themselves within cloud-native roles: full-stack, back-end, front-end, cloud, and mobile engineers, among others. We expect the current base of software engineers will continue to grow steadily, making LATAM an appealing location to harness software engineering talent.

In addition to the growing base of talent in Latin America, nearshoring there has additional benefits relative to other operating models. As opposed to teams distributed between the United States and more traditional offshore locations in Asia, nearshoring lends itself to real-time collaboration. Our clients have intentionally identified scope that benefits from real-time interaction between onshore teams and international teams, such as front-end development, real-time data pipeline work, and interactions between ML engineers and data scientists. From a talent experience standpoint, a nearshore model can help eliminate the time-zone fatigue inherent in coordinating handovers during daily endpoints.

Initiating operations in Latin America can be a daunting task with distinct complexities compared to other global markets. Making an intelligent expansion play involves knowing how to select the right location, attract the right local talent, and choose the right operating model.

Select the right location

Multiple factors are contributing to US companies' desire to move beyond long-used, low-cost Asian markets. Increased focus on work/life balance and wellness in today's post-COVID environment has magnified the demand for time-zone-aligned resources that enable increased collaboration and avoid fatigue from morning and evening handovers between agile teams.

Latin America has been a significant beneficiary of this trend. The region long has had strong technology capabilities—Brazil, Argentina, Chile, Colombia, and Mexico all boast large technology talent pools—but recently it has been seeing a rapid acceleration in interest as both captive operations and service providers seek to expand their global footprint. Couple this with finite availability of candidates with strong English language skills and the immediate opportunity to capitalize on this opportunity is clear.

Location matters, but not all locations are created equal. When strategizing where to nearshore in LATAM, companies should consider the following components: tech talent supply, English language capabilities, competitive landscape, strength and supply of the graduate pipeline, risk (security, natural disaster, economic), business climate, physical proximity percentage access, physical infrastructure, and operating cost.

The importance of a thoughtful and well-researched location strategy and a talent experience that responds to the specific demands of local software engineering talent cannot be understated. Myriad components must be thoroughly studied to avoid false starts. For example, companies may experience challenges unless they look at various components holistically—right country, wrong city; right city, wrong sub-market; right city, poor harmonization of physical facility and hybrid work strategy; abundant qualified talent, poor compensation and benefits strategy. Each component, and the degree to which the components are linked in a comprehensive strategy, will contribute to the success or failure of a captive technology hub.

Attract the right local talent

After selecting from among target market(s), the next step in creating a nearshore tech hub is developing a strategy to attract, recruit, develop, and retain top technology talent. We frequently find that clients who primarily focus on numbers-based, cost-optimization strategies face difficulties attracting and retaining talent in a new region because they overlook key aspects in building a strong employee value proposition (EVP). Getting compensation and benefits right is necessary, but not sufficient, to build healthy, long-term teams. Company leaders should also understand local motivations for the talent or else risk meeting their projected scale and productivity goals. The following insights may aid local talent recruitment and retention efforts:

- **Invest in brand awareness and brand and culture affinity.** The local talent market may be familiar with a company's brand, but the organization itself may not fully understand why or to what extent. Focusing on building brand awareness provides an opportunity to craft a positive brand image and perception in the region. For example, a US-based financial technology firm (fintech) looking to expand into Mexico realized that local developers knew the brand primarily because it sponsored an international football league. The fintech complemented this brand recognition by crafting a narrative to communicate its technology mission strategically and precisely, with a goal of attracting 90th-percentile talent and competing against the local

presence of large technology employers. In addition, connecting with the local community and showing the company's commitment to the region by engaging with universities and local officials can help build a strong local network and strengthen the brand.

- **Implement a localized, personalized, and scalable recruitment strategy.** Entering a new market requires that organizations develop a holistic plan to secure top talent at scale and in alignment with the overall market entry strategy. Recruitment and onboarding processes should be localized and personalized to deliver a high-touch and competitive acclimation experience that aligns with the brand and EVP. This begins with establishing an aggressive and realistic ramp plan that includes year-over-year workforce targets (for both experienced and early career talent), leadership ratios, recruitment service delivery leverage model, and resource requirements to effectively scale the workforce. Achieving scale requires building a strong foundation and driving growth through a multifaceted sourcing and recruiting approach. Core to this is securing top talent in the first hiring wave and leveraging that talent as the baseline organization to support scaling efforts to meet the workforce plan. As scaling occurs, recruitment teams should rely on a diversified talent pipeline that is sourced from market competitors, top university programs, and alternatives such as technology certification programs and forums.

- **Design a competitive career path for tech hub associates.** A 2022 report suggests that tech candidates regard career path and upskilling as the leading driver of employee satisfaction, with 70% of tech professionals in Mexico rating training and certifications as the most valuable benefit offered by their companies. A 2022 global survey of CIOs and IT decision-makers revealed that 93% say the Great Resignation has made it more difficult for IT teams to retain skilled developers, and 86% say it has become more difficult to recruit them in the past two years, raising significant hurdles for companies to meet productivity targets. Companies should be proactive about crafting logical, predictable, and merit-based career progression plans for associates that tie to a fair performance management process. In addition, companies should expect that tech hub talent will want to work on a variety of projects and have a say in their role placement; it is, therefore, important to offer learning opportunities and invest in technology certifications. Also, to attract junior talent and invest in candidates for the long term, companies should consider being flexible and offering academy-based hiring programs to upskill associates on specific technologies before they join full-time.

- **Be intentional in designing workplace experience.** Company leaders should be intentional when designing the nearshore workplace to ensure it reflects the company's brand values and commitment to the local market. A positive workplace culture can help increase employees' organizational affinity and productivity. We suggest frontloading experience workshops with early hires to define cultural pillars and ways of working that capture the company's long-term objectives globally. It is important to intentionally choose, build, and promote an environment that reflects the expansion strategy's winning spirit.

Choose the right operating model

In addition to location selection and talent acquisition strategies, it is also important that a company considers what type of operating model it should use to manage its nearshore tech hub operations. In our experience, a mature operating model encompasses four categories: vision and organization, engagement model, operations and governance, and roles and responsibilities (figure 1).

Defining the tech hub's operating model starts by establishing the overall vision for the hub's capabilities and how the company will organize to productively deliver these capabilities. Each framework category has specific considerations:

Vision and organization: You can't have it all. Establishing a sound vision can be one of the most challenging parts of a nearshoring journey, as the company must choose among and commit to the many trade-offs associated with the tech hub's specific role. International expansion initiatives are particularly challenging because many corporate functions must participate, such as engineering, operations, human resources, legal, and corporate development. In an effort to drive consensus across functions with competing interests, we find that clients may define too broad a role for the hub. It pays dividends to answer the essential question of "Why are we choosing to expand our technology operations?" early in the planning process and broker difficult conversations then to drive clarity and alignment.

Our capability design framework (figure 2) helps clients visualize different roles a tech hub could play, what capabilities are required, and what trade-offs are involved. For example, clients motivated to drive innovation may be interested in obtaining high-end, in-demand skills such as data scientists, machine learning, DevOps, and mobile engineers. According to leaders running Deloitte's own tech hub in Mexico, these skilled roles are notably difficult to acquire, and cost savings dwindle further when hiring the upper spectrum of the talent pool. Thus, it is important to recognize the possibility of diminishing cost returns when looking internationally to expand leading-edge capabilities.
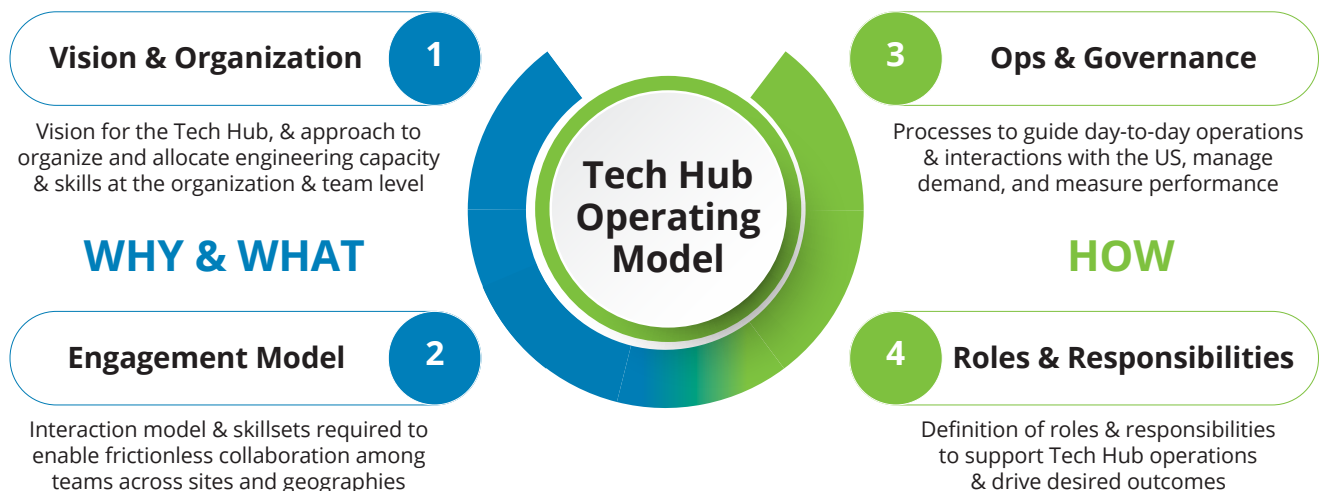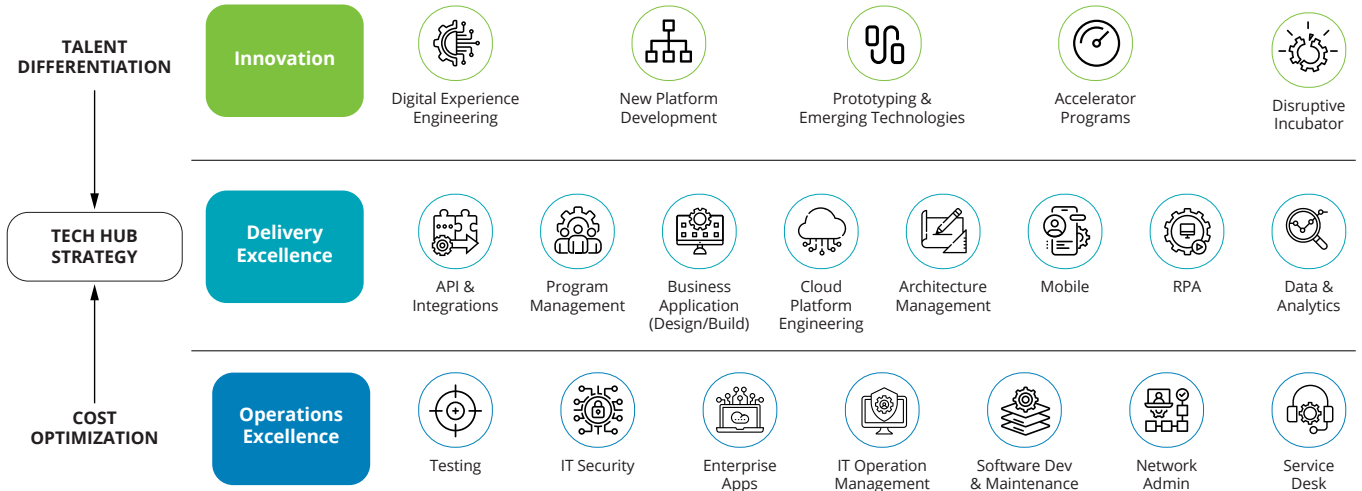
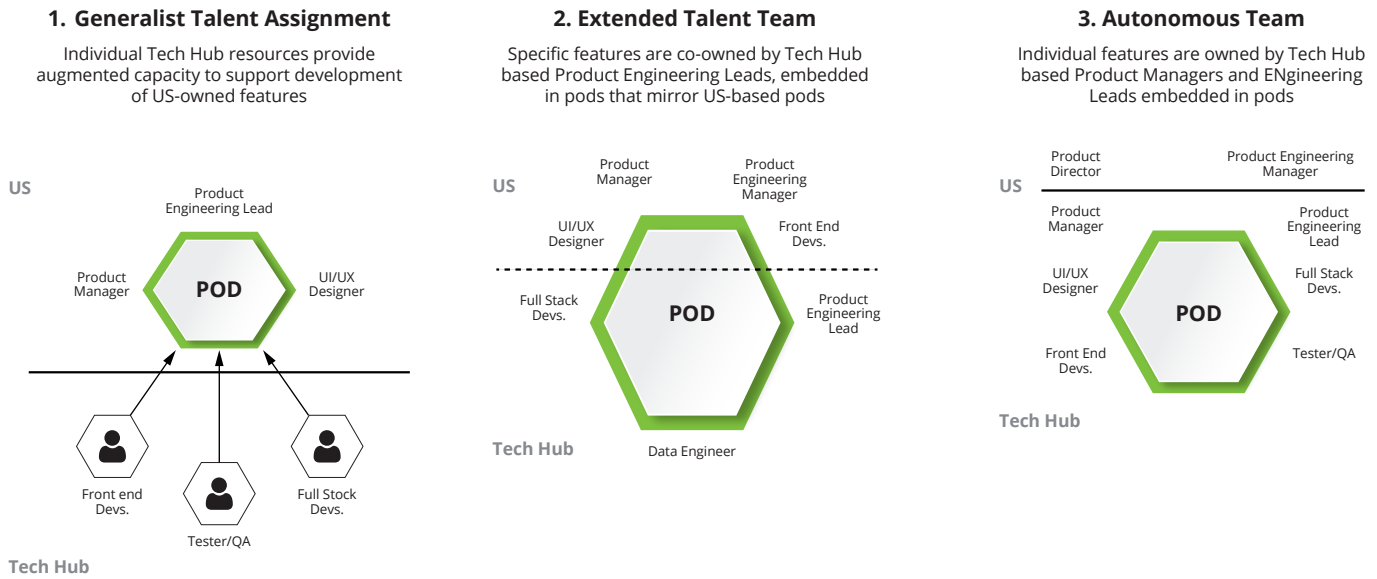Figure 1: Tech Hub Operating Model Design Framework

Vision & Organization — 1

Vision for the Tech Hub, & approach to organize and allocate engineering capacity & skills at the organization & team level

WHY & WHAT

Engagement Model — 2

Interaction model & skillsets required to enable frictionless collaboration among teams across sites and geographies

Tech Hub Operating Model

3 — **Ops & Governance**

Processes to guide day-to-day operations & interactions with the US, manage demand, and measure performance

HOW

4 — **Roles & Responsibilities**

Definition of roles & responsibilities to support Tech Hub operations & drive desired outcomes

Figure 2: Capability Design

TALENT DIFFERENTIATION

Innovation

Digital Experience Engineering | New Platform Development | Prototyping & Emerging Technologies | Accelerator Programs | Disruptive Incubator

TECH HUB STRATEGY

Delivery Excellence

API & Integrations | Program Management | Business Application (Design/Build) | Cloud Platform Engineering | Architecture Management | Mobile | RPA | Data & Analytics

COST OPTIMIZATION

Operations Excellence

Testing | IT Security | Enterprise Apps | IT Operation Management | Software Dev & Maintenance | Network Admin | Service Desk

Engagement model: Identify and design for the end customer. International expansion, whether near- or offshore, tends to be driven from the executive level because it is expensive, time-consuming, and involves complex cross-functional stakeholder coordination. Executive leadership shapes the high-level vision, but the message may become muddled as that vision is expressed to the rest of the organization. To avoid this pitfall, identifying and designing capabilities around the tech hub's end customer is paramount: Who will be interacting with the hub every day in the United States and how? For example, at a US-based fintech, we identified that the client's vertical organizations (typically aligned with specific revenue-generating products such as credit cards and commercial banking) would only engage with the tech hub under a specific working model. As a result, we designed three models—Generalist Talent Assignment, Extended Talent Team, and Autonomous Team (figure 3)—to support the needs of each organization, motivating directors across vertical functions to expand their teams globally.

Because this client's nearshoring approach features near-real-time collaboration, we proposed the company use the Extended Talent Team model, with the team directed by a US-based product manager and development responsibilities split across the US and the LATAM tech hub, with interaction throughout the day to drive consistent results. In contrast, an Autonomous Team model directed by local product managers would likely face challenges since the client will be setting up tech operations to support its global presence and local product managers may have difficulty understanding and strategizing for target markets that they are not exposed to.

Figure 3: Prevalent Pod Working Models

1. Generalist Talent Assignment

Individual Tech Hub resources provide augmented capacity to support development of US-owned features

2. Extended Talent Team

Specific features are co-owned by Tech Hub based Product Engineering Leads, embedded in pods that mirror US-based pods

3. Autonomous Team

Individual features are owned by Tech Hub based Product Managers and ENgineering Leads embedded in pods

Operations and governance: Strategize to drive internal demand. Determining what process will be used to consistently identify scope and distribute it to the appropriate tech hub teams is an essential operations and governance strategy. Two demand management approaches that we've found successful across clients are top-down and bottom-up capacity planning. A top-down approach is primed to assist with reaching long-term goals due to its ability to control scaling relative to the amount of demand at the highest level. Key ramp-up metrics such as headcount and budget by region are tightly governed, making this approach well-suited for organizations that are focusing on cost. Importantly, however, if downstream leaders are restricted in assigning high-level scope it may impede buy-in.

Alternatively, a bottom-up capacity planning approach will ask tech and product leaders, engineering managers, and site leadership to own resource allocation. For a demand request for a new mobile application feature, for example, team members may choose, with limited or no executive approval, to hire an engineer to lead the effort. In a bottom-up approach, tech hub end users have a place at the table when building their teams and directing resources to specific initiatives. The approach is a good fit for organizations that prioritize

autonomy, but it may create challenges in aligning execution with the goals of the global organization.

Roles and responsibilities: Define management structure. Once the type of work and how it will be delivered in the tech hub has been established, the next step is to create a management structure that enables engineers to effectively deliver value. Establishing oversight, operations, and execution governance layers will facilitate effective information flow and decision-making from tech hub leadership down to engineering teams. There are many ways to distribute responsibilities across these layers, but it is most important that the governance structure supports the key interactions between US and tech hub teams at the appropriate level. In addition to capturing responsibilities of engineering management, the structure will also encompass responsibilities of enterprise functions such as local IT, finance/accounting, and human resources. A RACI matrix is a commonly used tool that depicts which stakeholder will be "responsible, accountable, consulted, and informed" for specific tasks. Creating a RACI is an effective way to operationalize the tech hub and will act as a guide for describing detailed executable processes.

Taking a structured approach to nearshoring

The journey of designing, launching, and successfully scaling an international tech hub can be lengthy and difficult. However, given the accelerated pace of digital adoption across all industries and the ongoing need to find high-quality talent, we anticipate that companies will continue to consider nearshore expansion and that LATAM is an attractive option. By strategically addressing location selection, talent acquisition, and operating model considerations, companies can take a structured approach to launching and scaling nearshore tech hubs and realize the dual benefits of cost savings and access to a broad, high-quality talent pool.
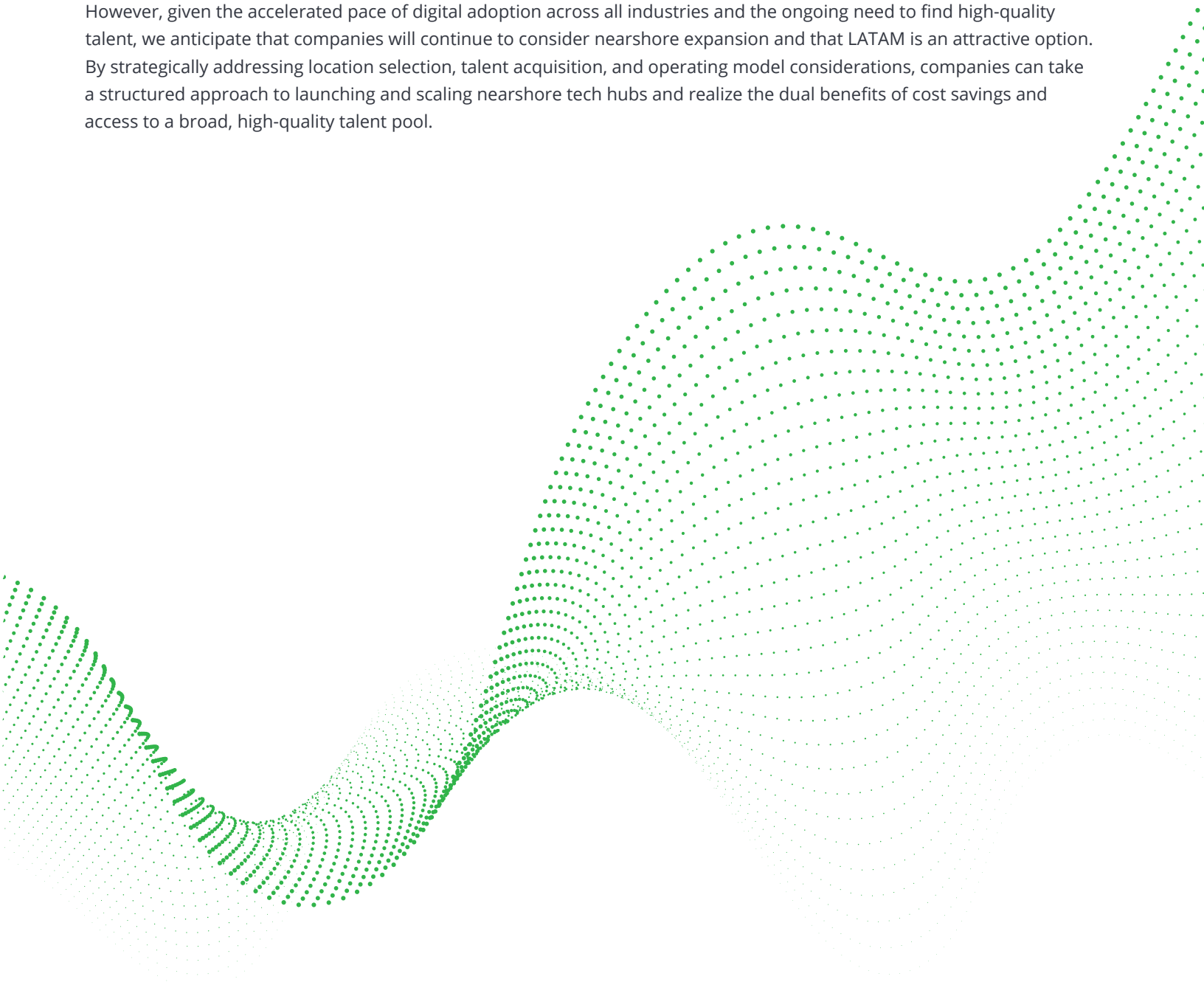
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