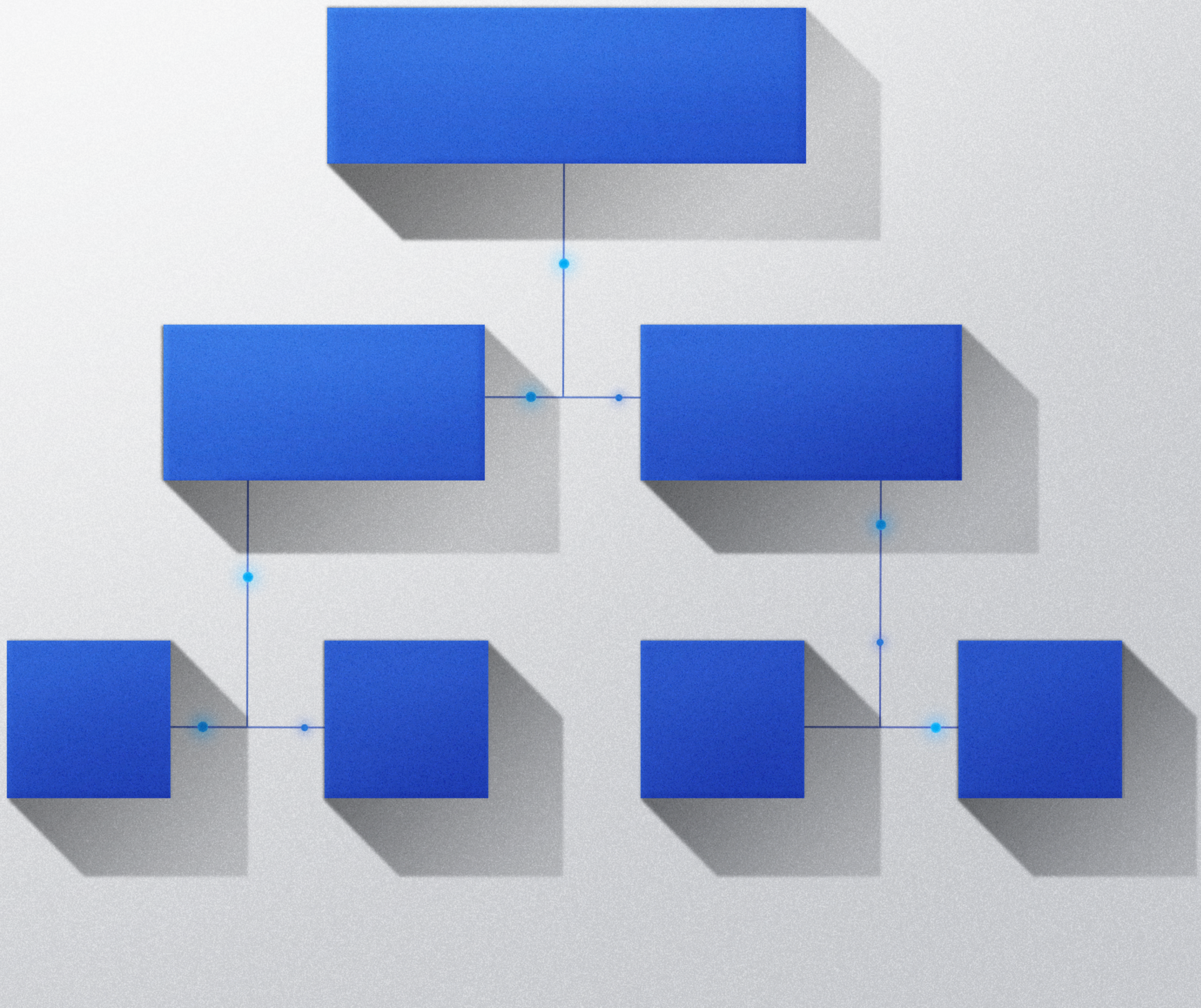
Toptal

Architecting **scalable** engineering teams

Insights from engineering leaders at five fast-growing companies into how they structure, manage, and grow their teams



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Introduction

Constructing teams is hard. Constructing scalable and successful engineering teams is even harder. Add the pressures inherent with engineering leadership—overcoming technical challenges, motivating your team, planning for scale, settling disputes, tracking key metrics, and reporting to executive management—and you take in a lot of information and make countless vital decisions every day. How you structure your team can alleviate some of the management challenges.

When building and structuring your engineering team, ask yourself:

+ Will you assign each team to be responsible for a section of the codebase?
+ Will you use front-end and back-end engineers or make everyone go full stack?
+ Will each engineer report directly to you or do you need another layer of management?
+ If you do need that next layer, when is the right time to add it?

As an engineering manager responsible for setting up or improving your team's structure, you are likely already thinking through some of these questions. In this e-book, you will meet engineering leaders from five fast-growing companies

and learn how they have structured their teams. We spoke to Chief Technology Officers and Directors of Engineering whose companies are at different stages in their growth cycles.

You will learn about some of the unique challenges they face and how they make decisions based on their company's size, industry, and product.

Depending on your current situation, you might want to jump directly to a specific section of this e-book.

- If you lead several heavily interdependent teams, check out ActiveCampaign's Three-in-a-Box Team Leadership Model that enables the company to create highly autonomous engineering teams as it scales.

- If you find that engineering teams are not strongly aligned with business goals, learn how Toptal leverages Stakeholder-focused Squads to build strong relationships between engineers and business stakeholders despite having an entirely distributed team.

- If you lead an engineering team at an early-stage startup, there is also plenty in this e-book for you:

  + Learn how Cube leveraged the technical strengths of its leaders to create a Front-end/Back-end Split Structure.

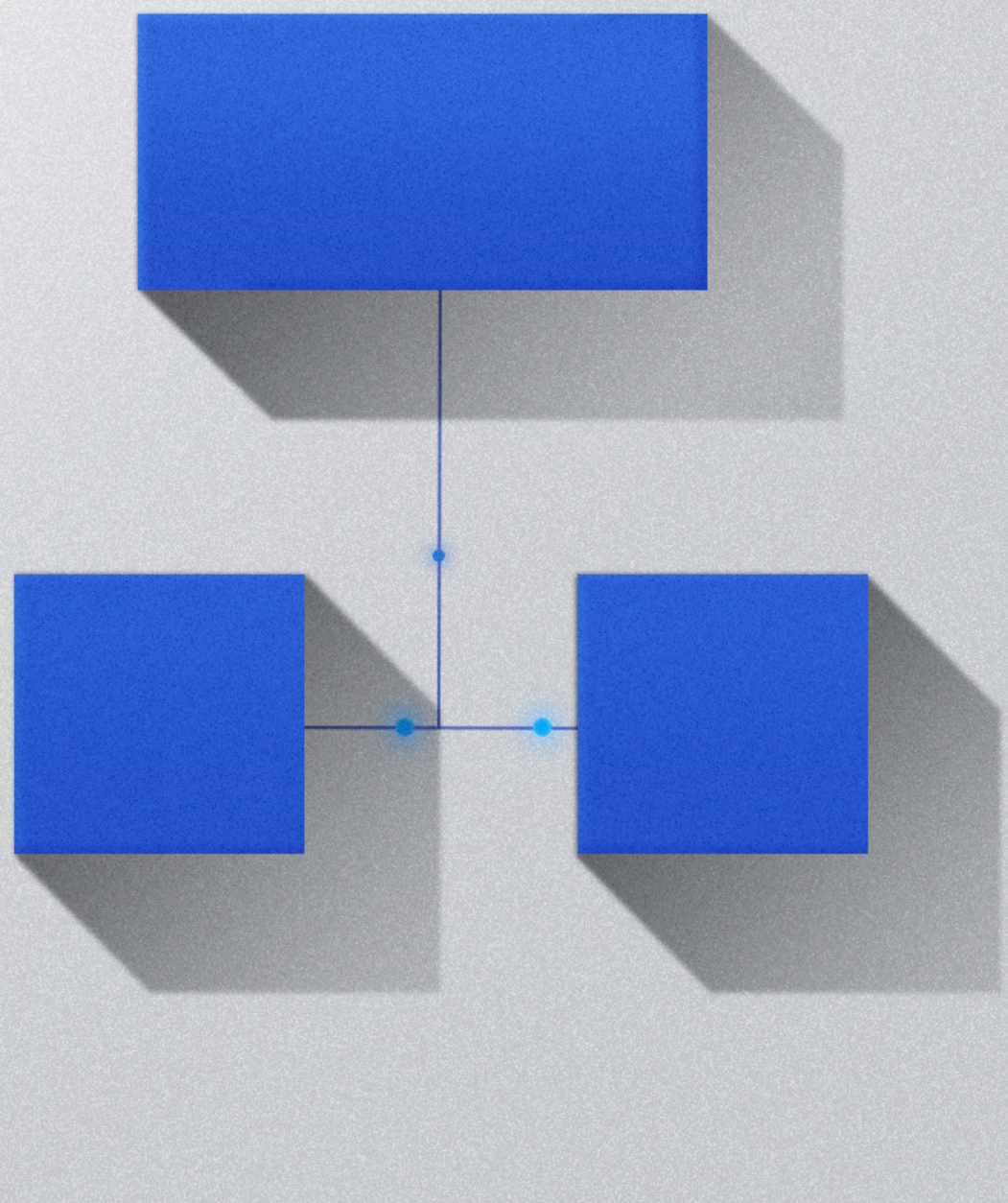
  + Learn how Cohesion built its engineering organization using an Augmented Team Model.

  + Learn how Valence hires engineers with nontraditional backgrounds to fill out its Function-centric Engineering Hierarchy.

There is no such thing as the "perfect" engineering team structure. Your organization and product will change over time but learning what works—and what has worked—from other engineering leaders can help ensure a smoother journey.

As you organize your engineering team, you can leverage some of the insights and advice shared here.

/01 **ActiveCampaign's** Three-in-a-Box Team Leadership Model



ActiveCampaign's Three-in-a-Box Team Leadership Model

In this section, we share insights from **Rocco Palladino, Director of Engineering at ActiveCampaign**. He was one of the company's first engineers and has grown with the business into his current role as one of its Directors of Engineering, in which he oversees six teams.

ActiveCampaign is a customer experience automation software company that serves more than 150,000 businesses in more than 170 countries. Founded in 2003, ActiveCampaign now has more than 700 employees and drives more than $165 million in annual recurring revenue.

ActiveCampaign's engineering team structure has gone through several permutations since Rocco Palladino joined the company more than five years ago as one of its first engineers. He is now one of ActiveCampaign's Directors of Engineering and oversees six teams.

Throughout his tenure, Palladino has seen the company grow and evolve its engineering team structure. ActiveCampaign follows a unique Three-in-a-Box Team Leadership Model and has set up teams to be as autonomous and productive as possible.

The Early Days

When Palladino joined ActiveCampaign, there were only seven engineers. They reported directly to the CTO while the CEO acted as their product manager.

"We hired full-stack engineers almost exclusively … and they would do a lot," Palladino says, noting that each engineer would perform myriad duties. One advantage of this approach is that any engineer could cover any part of the codebase when someone was out of the office. It enabled ActiveCampaign to change priorities quickly without needing to hire new people. Its team was small and flexible enough to adapt.

When the group grew to more than 10 engineers, it split into two teams with Palladino as the tech lead on one. However, the small squad lacked the cohesion or shared goals that ActiveCampaign was aiming for.

"The teams didn't really act like a team," Palladino says. "They were a bunch of individuals working on different things, so I was 'leading' them in that I knew what each was doing, but none of them knew what each other was doing."

Over time, the company added more engineering teams, each led by an engineering manager. Palladino moved into a director role to offer guidance and leadership to each.

Adopting Cross-functional Team Leadership

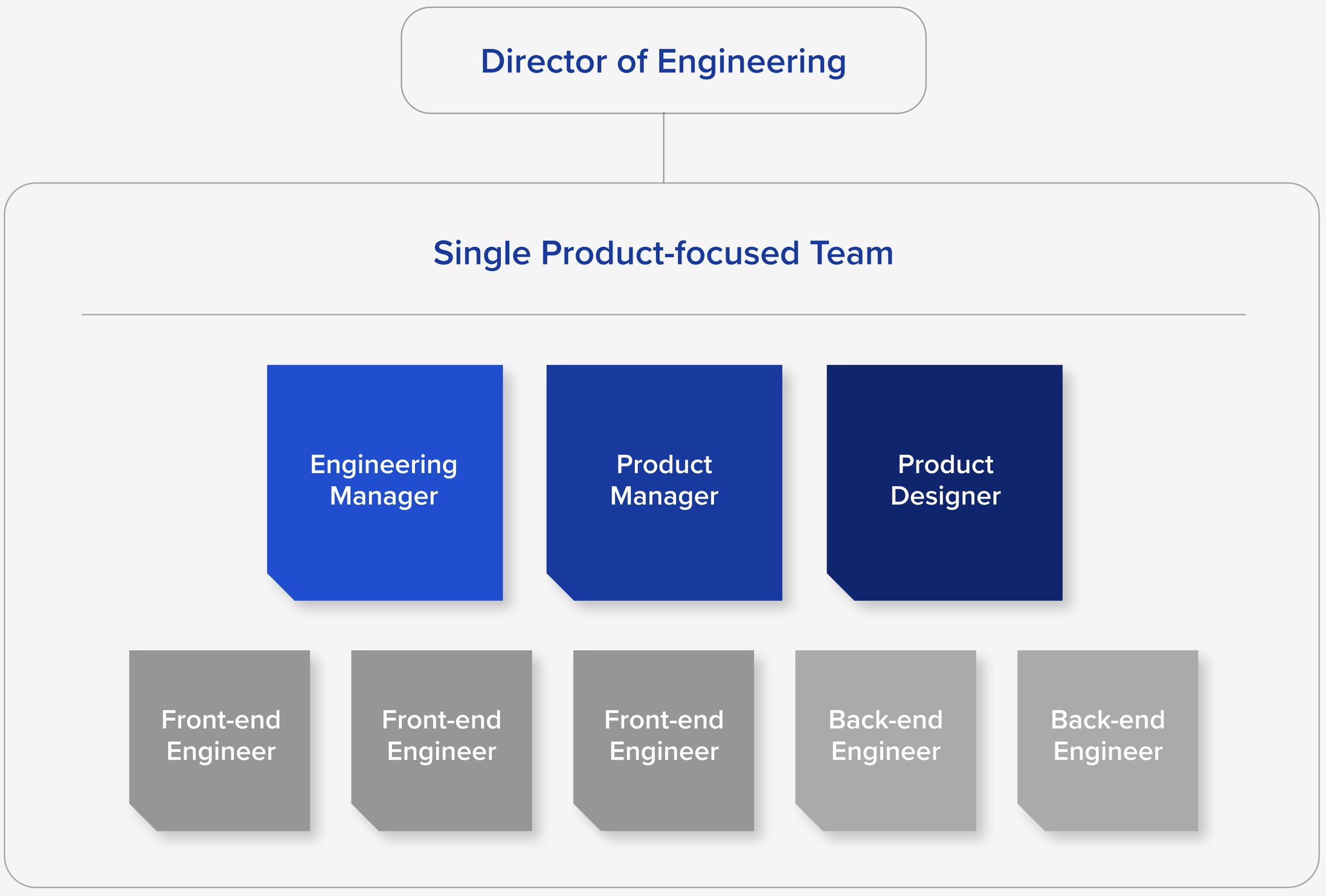
ActiveCampaign's engineering teams maintain internal and customer-facing products used to automate customer experiences, send emails and SMS messages, create and personalize landing pages, report results, and more. Palladino says the evolution took time but sets up engineering for success today and into the future.

"It took us a while to get to the model we have now," he says. Engineering leaders realized they needed developers and product managers with expertise and long-term ownership of particular areas of the products; they eventually landed on their present system.

"We're currently organized into Scrum teams, and every team has an engineering manager, a product manager, and a product designer. We think of those three as the leaders of the team,"

Palladino says. He compared it to the two-in-a-box structure that companies like ThoughtWorks use.

The leaders of each team work together to define a cohesive direction for the product, user experience, and engineering. Because each leader has domain expertise in a particular area and is hyperfocused on a single part of ActiveCampaign's product, they can operate autonomously and work quickly.



ActiveCampaign's Three-in-a-Box Leadership Model encourages highly autonomous teams.

Team and Member Specialization

"When you're trying to solve problems of scale—as is the case for ActiveCampaign now—you want some people with specialized expertise," Palladino says.

To that end, each product team typically comprises five to seven engineers who learn the ins and outs of their part of the product. Each engineer further specializes in front-end, back-end, infrastructure, or some combination of engineering skills. This model enables each team to plan, execute, test, and deploy updates without the need for outside support.

This ethos of hiring specialists also applies to how ActiveCampaign works with contractors. While a small fraction of the engineering team, freelancers play essential roles in projects with well-defined scopes or specialized skills that don't require a lot of domain-specific knowledge. Palladino says ActiveCampaign's recent upgrade of its front-end framework is a powerful example of the importance of contractors.

"When you're trying to solve problems of scale—as is the case for ActiveCampaign now—you want some people with specialized expertise."

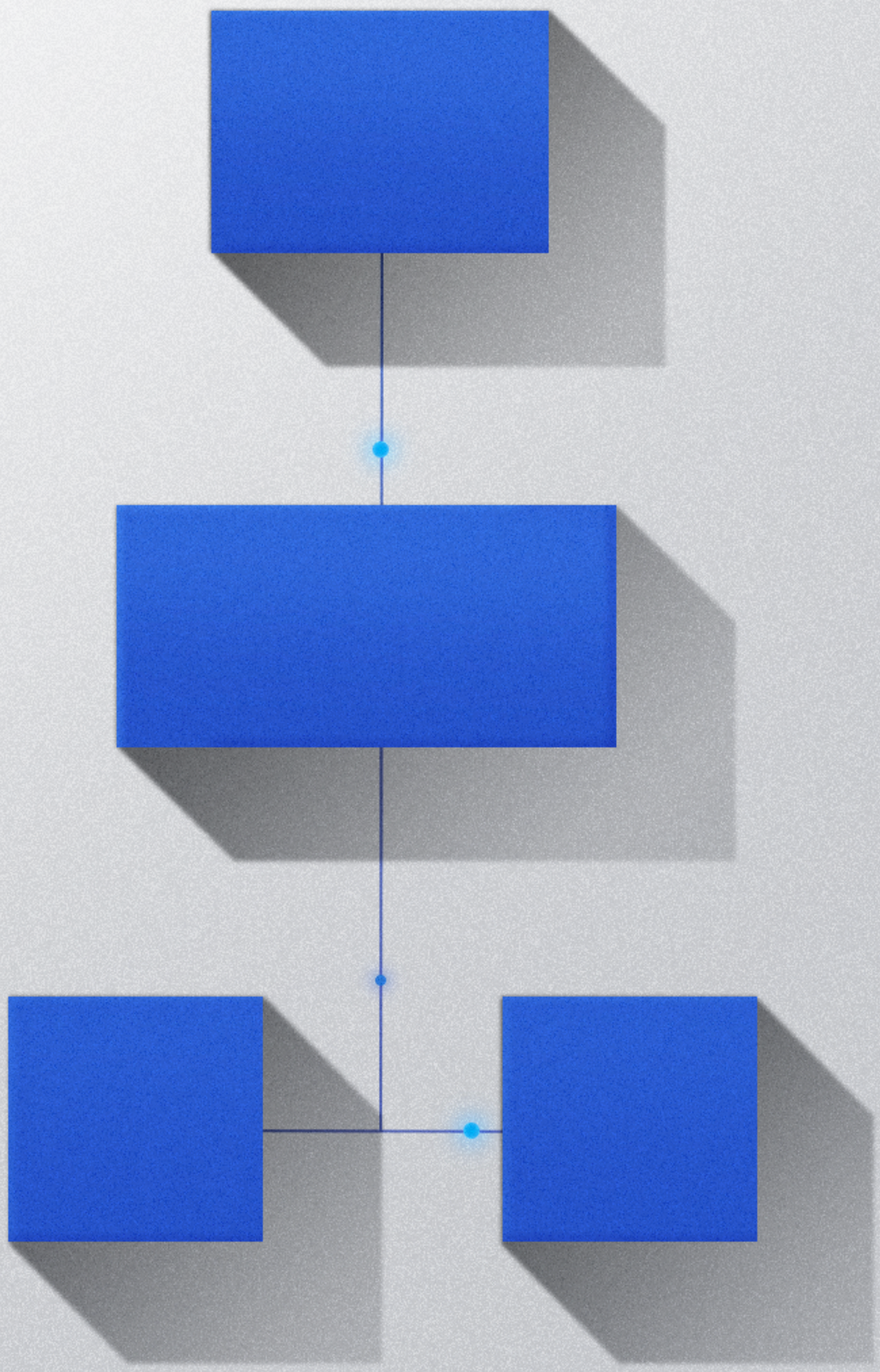
Rocco Palladino
Director of Engineering, ActiveCampaign

"Much of our front-end is built on the Ember.js framework," he says. "We were a few versions behind so we wanted to upgrade the framework, but our engineering teams were all busy on business-critical projects. That was a great project where a contractor with Ember experience could come in and help us get caught up without having to know everything about our company."

Specialized product-focused teams like ActiveCampaign's require trade-offs, as well. ActiveCampaign optimized this model for autonomy, which sometimes makes it challenging to structure and plan projects that involve multiple teams.

While ActiveCampaign's team structure works today, leadership is already thinking about the next iteration. "We're starting to hire people who have scaled an engineering organization to that next level," Palladino says. "And we're looking to them for guidance."

/02 **Toptal's** Stakeholder-focused Squads



Toptal's Stakeholder-focused Squads

In this section, we share insights from **Marco Santos, Director of Engineering at Toptal**. Marco is a technologist with 20+ years of development and management experience. At Toptal, he manages a team of more than 40 engineers. He has navigated a variety of engineering and product challenges across multiple sectors and technical disciplines, and has worked in senior leadership for companies like OpenX and Yahoo.

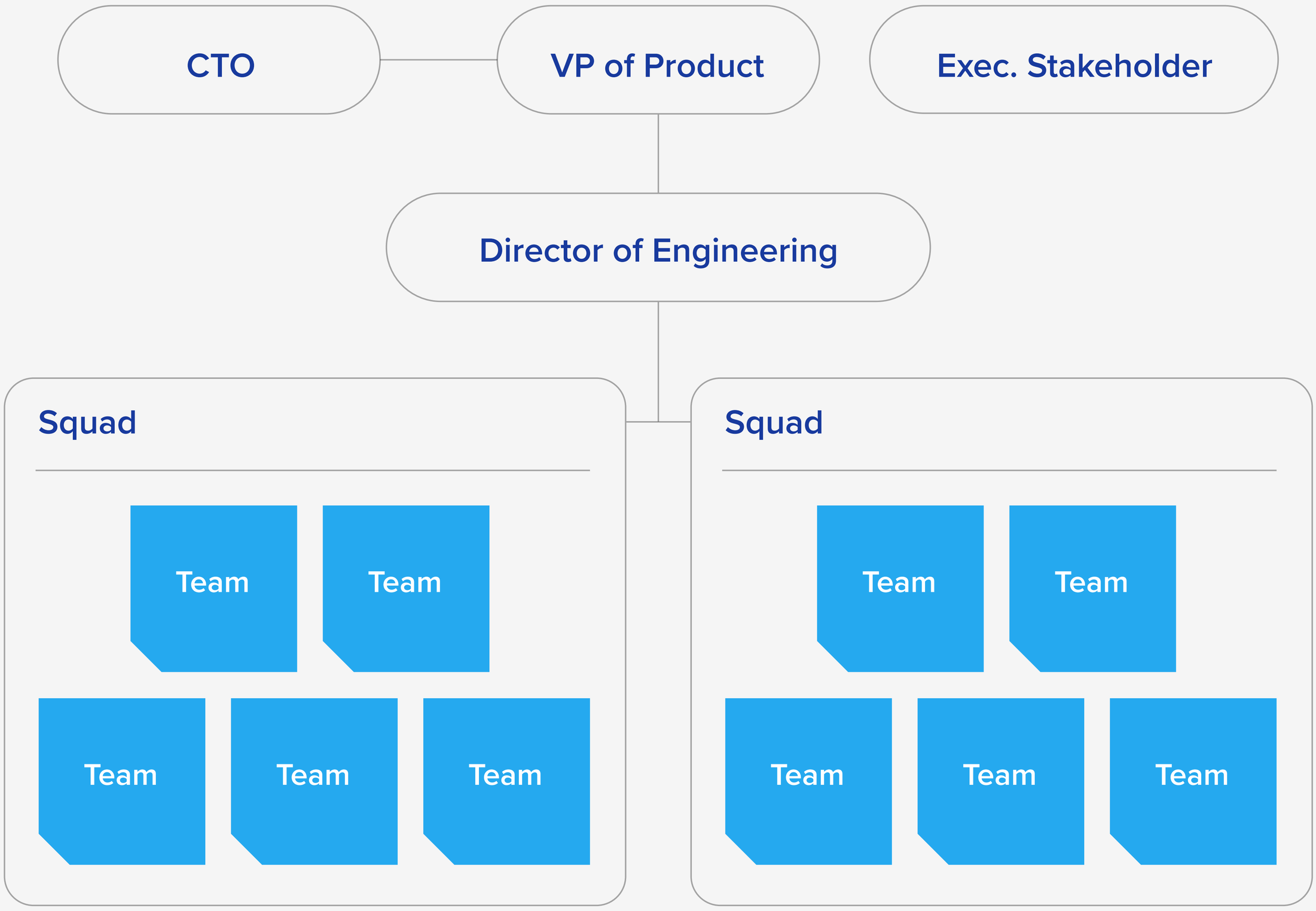
Toptal was founded in 2010 and is now the world's largest fully distributed workforce. Toptal has served more than 16,000 clients and has a global talent network with more than 10,000 members in 134 countries.

Toptal's all-remote structure has shaped the business, and its team architecture offers insights into building a successful engineering organization.

Marco Santos joined Toptal in 2020 and now serves as one of the company's Directors of Engineering. Santos says Toptal structures its teams into Stakeholder-focused Squads to maximize the value that each delivers to the business.

Toptal's Engineering Team Structure

"We have a director responsible for a squad of teams centered around a domain," Santos says. "Each squad has a single executive stakeholder that they serve." Santos is in charge of two squads: Growth (marketing tools and landing pages) and Data (pipelines, analytics, and data science).



In this diagram, each team comprises an Engineering Manager, Front-end Engineer, Back-end Engineer, and QA Engineer.

Toptal's Stakeholder-focused Squads ensure consistent delivery of business value.

For Growth, Santos coordinates work primarily with the Vice President of Growth Marketing and keeps the company's Chief Technology Officer and Vice President of Product informed of significant decisions. The key advantage of this structure is that engineering teams are in close contact with the stakeholders they support, helping to ensure that both parties are always aligned on the goals of each initiative.

This model presents some challenges when a team is responsible for a legacy codebase with cross-cutting concerns. For example, legacy code doesn't always fit perfectly into a single division, so Toptal engineering leads have to determine how to best divide and address the work on a case-by-case basis.

Speaking of Growth

The Toptal engineering organization has grown quickly. One challenge Santos and his fellow directors face is how to structure their teams so that each can scale and multiply as needed. Santos admits that capacity planning is a bit of art and a bit of science. A model he finds helpful is the "minimum operating team size": three engineers, one lead, and a half-time quality assurance engineer. A team of three full-time engineers and a half-time QA engineer justifies having a manager and builds in enough redundancy to avoid falling apart if a member leaves.

"If you're growing slowly, focus on internal hires, but if you're growing rapidly, you want to make sure you don't suddenly have a pool of only people you've raised from within."

Marco Santos
Director of Engineering, Toptal

As a team grows, it will need to be split into two eventually, which Santos says he does "like an amoeba." He adds members to an existing team until it is large enough to justify having two managers, and then he splits it based on a logical division of work. This approach preserves the engineering culture they have worked hard to build while allowing teams to stay focused on single parts of the product.

Santos says he scales teams with a balance of external hires and internal promotions.

+ External Hires: Healthy organizations need fresh thinking to prevent stagnation of culture and ideas. Experienced leaders from other companies often help identify blind spots.
+ Internal Promotions: Rewarding excellent engineers with promotions is essential for retaining talent. Experienced internal engineers have a wealth of institutional knowledge and context, and a deep understanding of the nuances of the company's engineering teams and their structure.

"My personal preference is to have a safe ratio of external hires to internal promotions, especially if you're growing rapidly," Santos says. "If you're growing slowly, focus on internal hires, but if you're growing rapidly, you want to make sure you don't suddenly have a pool of only people you've raised from within."

> **“We think about it like cloud scaling. When you have extra load, you autoscale up a little bit. It’s really nice we have this amazing network of talent we can use to scale up.”**
>
> **Marco Santos**
> Director of Engineering, Toptal

Freelancers: Unlocking Temporary Growth

One method Toptal uses to bring on engineering talent faster is through contractors. “We’ve got a whole network of freelance engineers available,” Santos says, so when a project has an element of urgency or demands an engineer with a specific skill set, contractors can augment Toptal’s core engineering team. Toptal often leverages the high-quality talent that is part of its freelance network.

There are also times when a project needs to get done, but the leadership team isn’t sure if the increased capacity will be necessary in the long run. “We think about it like cloud scaling,” Santos says. “When you have extra load, you auto-scale up a little bit. It’s really nice we have this amazing network of talent we can use to scale up.”

Engineering Success in a Remote Company

“Success of a team means delivering stakeholder value. … If you make your product manager happy and you’re delivering at a great pace, then you’ve done the job,” Santos says. He adds that being in a distributed team encourages the organization to focus on metrics that matter (e.g., delivering value to customers and stakeholders) rather than those that do not (e.g., spending a set number of hours in your chair).

While the metrics Toptal uses vary for every squad and project, there are a few key engineering metrics that Santos tracks across his teams: release frequency, defect rate, and the predictability of their estimates. While estimates are never perfect, a team whose story points pinball between really high and really low each week may need its work broken down better in the future.

“I have never before worked at a company that onboards so well. As a remote business, it’s critical to get new engineers up and going quickly.”

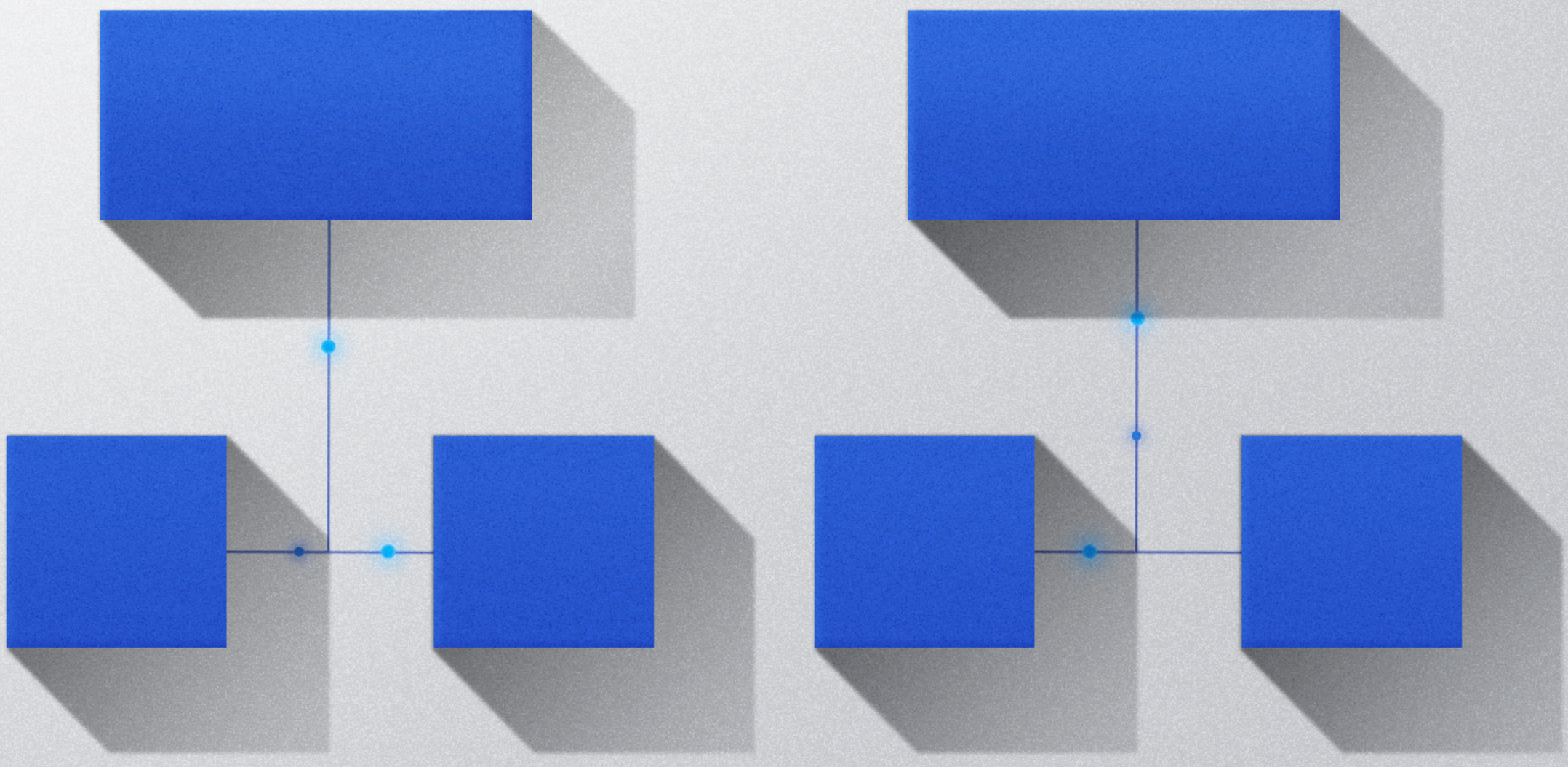
Marco Santos
Director of Engineering, Toptal

Smooth Onboarding

Toptal has grown its remote team quickly because it has learned how to onboard new engineers successfully. “I have never before worked at a company that onboards so well,” Santos says. “As a remote business, it’s critical to get new engineers up and going quickly.”

With clear expectations, documentation, and structured collaboration, new engineers usually begin coding on day one, ensuring that new team members join a productive and friendly environment that they want to stay in for years to come.

/03 **Cube's** Front-end/ Back-end Split Structure



Cube's Front-end/ Back-end Split Structure

In this section, we share insights from **Josh Holat, Chief Technology Officer and Co-founder at Cube,** a company dedicated to making FP&A faster, smarter, and simpler. Before Cube he co-founded a business that created fan clubs, email marketing, and e-commerce stores for content creators, bands, and celebrities. He is a self-taught programmer who enjoys the challenge of building new companies and engineering teams.

Cube, a financial analysis and planning platform founded in 2018, closed $10 million in series A funding in early 2021. Headquartered in New York, Cube's platform combines SaaS with the flexibility and familiarity of spreadsheets.

While it has been several years since ActiveCampaign or Toptal created their first engineering teams, Josh Holat, Chief Technology Officer and Co-founder of Cube, is an engineering leader in the midst of this process today.

In its first two years, Cube's engineering team grew to six people. After securing funding, Cube doubled its engineering team in the first quarter of 2021, and Holat is reconfiguring his team around the new hires.

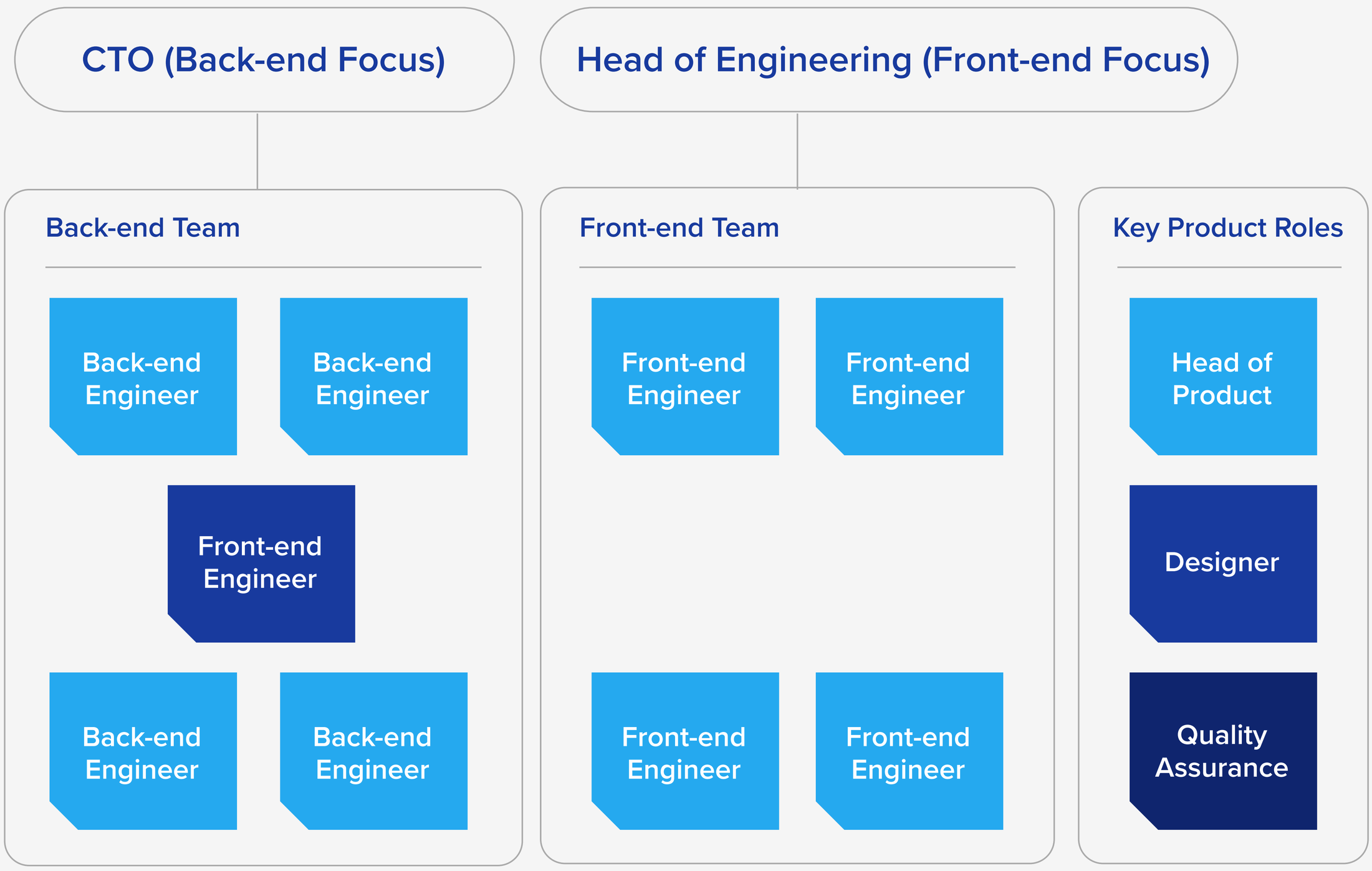
Hiring a Complementary Leader

While Holat has been a hands-on CTO at Cube, he's not an expert in front-end development. One of his first key hires was a front-end lead.

"What I really needed was a strong front-end team lead, but when we hired Jason [Bellamy, now Cube's Head of Engineering], we got

a really strong engineering manager as well," Holat says. Having both a CTO and Head of Engineering early on made the division of labor a little unconventional. Still, Cube made it work, knowing that the temporary arrangement would ensure both leaders could contribute in the most effective ways possible.

Today, Holat and Bellamy lead the back-end and front-end teams, respectively.



Cube is using a Front-end/Back-end Split Structure.

"Once your application becomes sufficiently complex, you want people who specialize in front end and back end, and it's crucial that you set up your early code well," Holat says. "That's what you'll be building your whole app on." With just four front-end and four back-end engineers on the team, Cube hasn't broken them into different product teams yet. Instead, the company divided the engineers by their specialties, and the two engineering leaders act as hybrid technical and managerial leads.

What About Supporting Roles?

Small engineering teams at startups the size of Cube usually lack the budget to hire full-time employees in support roles (e.g., product, site reliability, QA). Like most startup CTOs, Holat has to be creative. For example, he still knows the codebase well enough to offer feedback on pull requests and to be the primary on-call engineer. Cube hired a freelance site reliability engineer to help set up and orchestrate its continuous integration and delivery pipeline. Holat also uses contractors to address isolated parts of the codebase, like Cube's marketing site, and to smooth out the rough edges in the CSS.

Temporary help is invaluable for companies that cannot commit to full-time hires but know they need expertise they do not have available in-house. That is why so many startups rely on talent networks like Toptal to augment their teams early on.

Metrics, Estimates, and Tracking

While some small engineering teams do not invest much time in tracking, reporting, or estimating work, Cube has started putting some of these best practices into place. "Surfacing numbers like test coverage and how long a ticket takes to go from started to shipped helps push engineers to pay attention to these metrics," Holat says.

The engineering team uses Fibonacci Agile estimation—a scoring scale for estimating the effort required to complete development tasks—to track capacity and velocity. Holat admits that estimation has limits. It makes Cube's engineers think about the complexity of the work, but from a management perspective, the data is more useful in aggregate than on a story-by-story basis.

“As this codebase gets more complex, we’ll need engineers with experience in each specific part of the product. As I get busier and can’t manage a team anymore, we’ll hire technical leads to support each team, as well.”

Josh Holat
Chief Technology Officer
and Co-founder, Cube

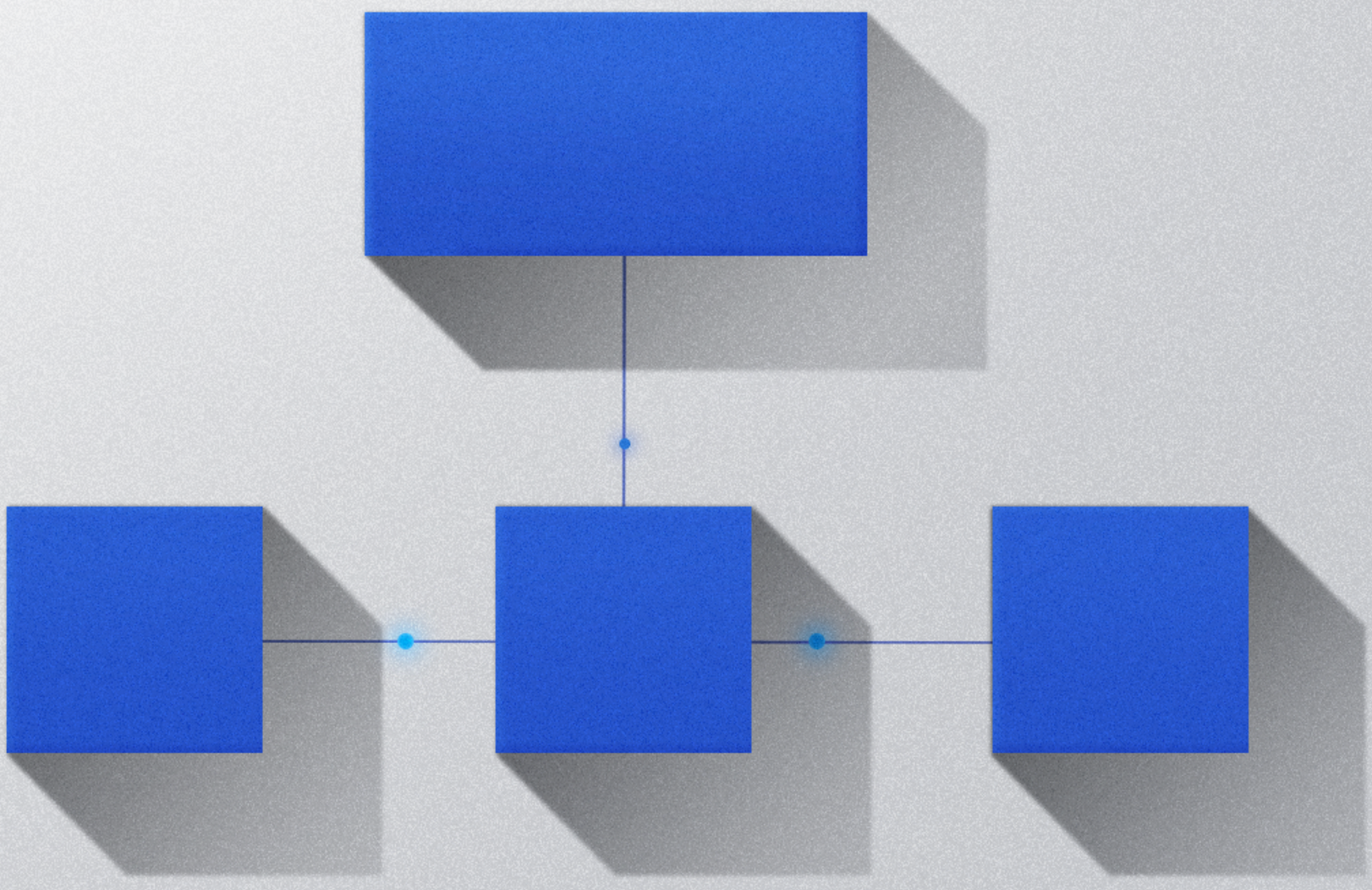
Where It’s Going

Holat says that Cube’s structure is still a work in progress. As the team continues to grow, he and Bellamy plan to start aligning teams with products.

“As this codebase gets more complex, we’ll need engineers with experience in each specific part of the product,” Holat says. “As I get busier and can’t manage a team anymore, we’ll hire technical leads to support each team, as well.”

While splitting teams too early might impede knowledge transfer, at some point it becomes impossible for every engineer to know what everyone else does. Holat says Cube hopes that its forthcoming product-focused structure will enable it to scale its teams and product to the next milestone.

/04 **Cohesion's** Augmented Team Model



Cohesion's Augmented Team Model

In this section, we share insights from **Nik Patel, Chief Technology Officer and Co-founder at Cohesion**. As CTO, Nik is responsible for leading execution of software development efforts to achieve the company's vision and goals. Over the 10+ years of his career, he has continued to work on numerous technology stacks, database systems, and IT infrastructure to create scalable, resilient, and adaptable software systems. Nik has a keen ability to take an idea from concept to inception with limited resources and specializes in finding an optimal technology solution that fits the market needs.

Founded in 2018, Cohesion is a cloud-based IoT company for smart buildings. Now in nine cities around the world, it is backed by $6.5 million in funding.

While many engineering leaders grow their teams primarily through in-house hires, Chief Technology Officer and Co-founder Nik Patel takes a different approach. Instead of building all of its engineering teams internally from the ground up, Cohesion hires satellite teams provided by offshore consulting companies.

This approach has helped Cohesion scale from a single five-person engineering and product team to 30 engineers in little more than a year. Cohesion was also able to build a solutions engineering team responsible for implementing its platform with each new customer. Patel says he structured the company's engineering teams to maintain strong communication and track performance throughout the technology side of the organization.

Why Staff Augmentation?

"Back in 2019, when we were just finding product/market fit, we had to build something fast," Patel says. "Hiring is a huge operational challenge, so we put out an RFP to find a company that already had teams of engineers we could use."

A significant advantage of this approach was that Patel could get started quickly without worrying about the operational complexity of hiring, onboarding, paying, and managing each team.

"Hiring is a huge operational challenge, so we put out an RFP to find a company that already had teams of engineers we could use."

Nik Patel
Chief Technology Officer and Co-founder, Cohesion

Cohesion has satellite teams in India and Argentina, as well as in-house engineers in the United States. The consulting company that manages the satellite teams handles payroll and legal paperwork for each hire while Cohesion sets the culture, team structure, and engineering processes that each team follows. This model enables Patel to offload most administrative tasks while maintaining the quality control and reporting structures required to run an effective and efficient engineering team.

Communication and Culture Structures

Many engineering leaders balk at this approach to building teams because they worry about the communication and cultural challenges outsourcing could present. Patel admits that he had to adjust the team's process to make it work, but the benefits outweigh the costs for Cohesion.

When Patel was setting up the company's first satellite team, he spent three weeks in India and worked in the evenings to overlap with the company's office in Chicago. As Cohesion added more engineering teams, though, the dual schedule became challenging to manage.

"We set up an overlap time from 8 AM Central to 12 PM Central every day where all the teams work at the same time," Patel says. "From an engineering standpoint, that is our productivity time that we hold sacred." The team limits meetings during that time

to only those that are essential so that engineers can work and communicate internally as much as possible during their four-hour block.

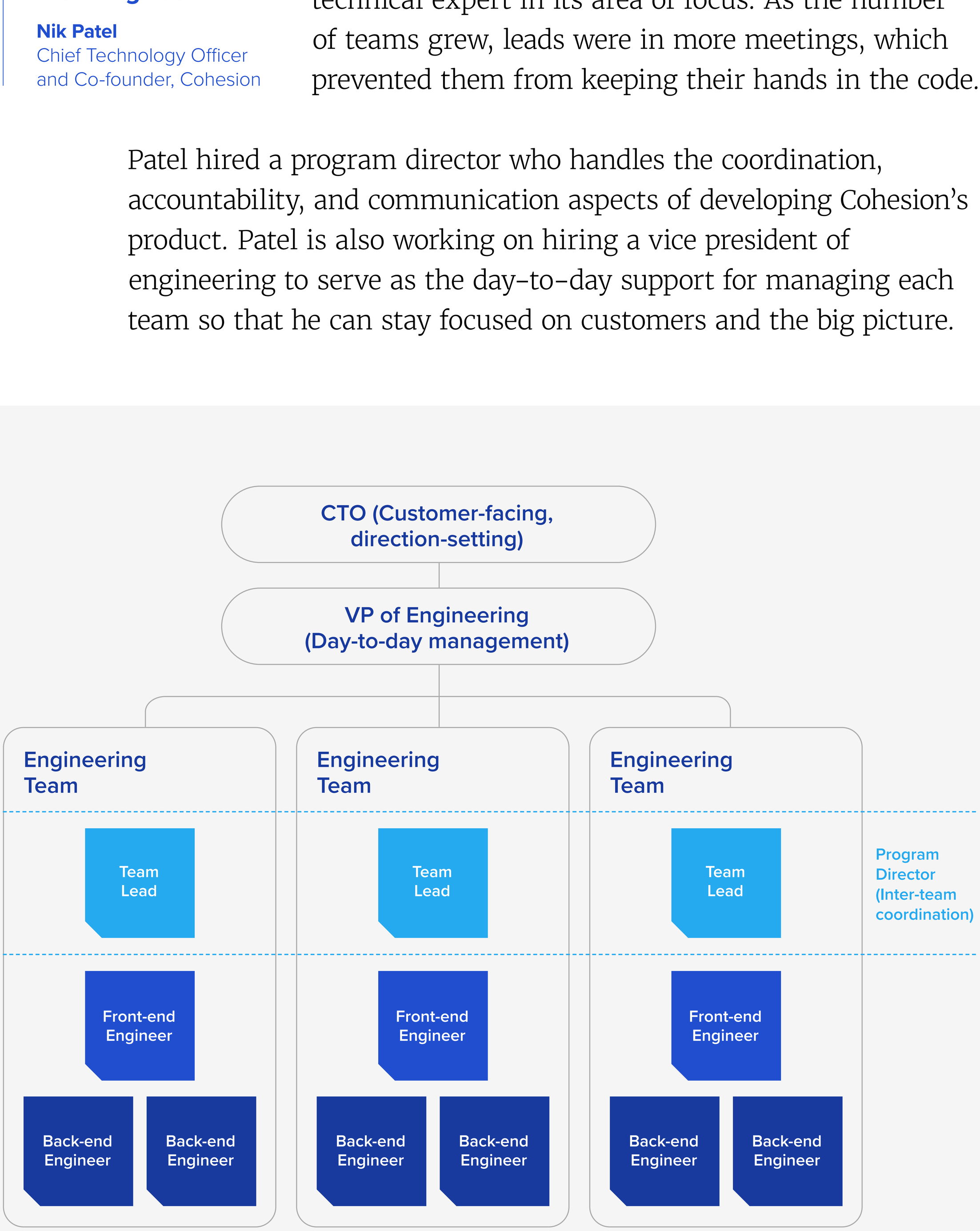
"Engineers, regardless of where they are in the world, are problem-solvers, and they like to know how their solutions are being used."

Nik Patel
Chief Technology Officer
and Co-founder, Cohesion

Another challenge Patel has had to solve in using the augmented team approach is handling cross-team communication.

Each team has a "team lead" who is the primary technical expert in its area of focus. As the number of teams grew, leads were in more meetings, which prevented them from keeping their hands in the code.

Patel hired a program director who handles the coordination, accountability, and communication aspects of developing Cohesion's product. Patel is also working on hiring a vice president of engineering to serve as the day-to-day support for managing each team so that he can stay focused on customers and the big picture.



Cohesion's Augmented Team Model includes a cross-cutting Program Director.

Patel integrates satellite teams into Cohesion's broader mission and treats them the same as internal members, not as replaceable cogs in an engineering machine. "We tell them about what is going on with the company," Patel says. "Engineers, regardless of where they are in the world, are problem-solvers, and they like to know how their solutions are being used."

How Does the Augmented Team Approach Scale?

As Patel has grown Cohesion's engineering team, he has started focusing on metrics more than the company did in its earlier days. "Gut feeling works when you're a small team, but as you scale, it doesn't work as well," he says.

Cohesion's KPI framework now uses three levels of reporting:

+ Team KPIs: Reports each team lead's primary challenges or areas of emphasis (e.g., number of experiments, cycle times). The team leads create these KPIs, which are tracked and reported only at the team level.
+ Interteam KPIs: Tracks metrics common to all teams (e.g., committed story points versus actual story points, deployment frequency), which helps Patel see which groups consistently deliver at a high level and which groups might need more attention.
+ Department KPIs: Shows the rest of the business how engineering contributes to the company's strategic goals (e.g., uptime and meeting service-level agreements).

This satellite team structure is likely to change as Cohesion grows. The company brings on each augmented team with a "build/operate/transfer" clause that allows the company to move them in-house in the future. It is likely that these teams will continue to work remotely but may be directly paid and managed by Cohesion once it has the operational bandwidth to do so.

/05 **Valence's** Function-centric Engineering Hierarchy

Valence's Function-centric Engineering Hierarchy

In this section, we share insights from **Snehal Kundalkar, Chief Technology Officer at Valence.** She's been a tech leader for the past two decades, including work at Apple and Reddit. Snehal strives to be a change-maker and advise next-generation minority leaders.

Valence is a mission-driven startup building a community—now with more than 18,000 members—for the next generation of minority leaders, starting with the Black community. Founded in 2019, Valence raised $5.25 million in financing in 2020.

It is rare to find an engineering leader who has led teams at large and small companies. Snehal Kundalkar is just such an executive. For the last two decades, she has been in engineering roles with some of the most recognized brands in the world, including Apple and Reddit. Today, she is the Chief Technology Officer at Valence. Kundalkar says the lessons she learned at larger companies are helping her structure Valence's engineering team.

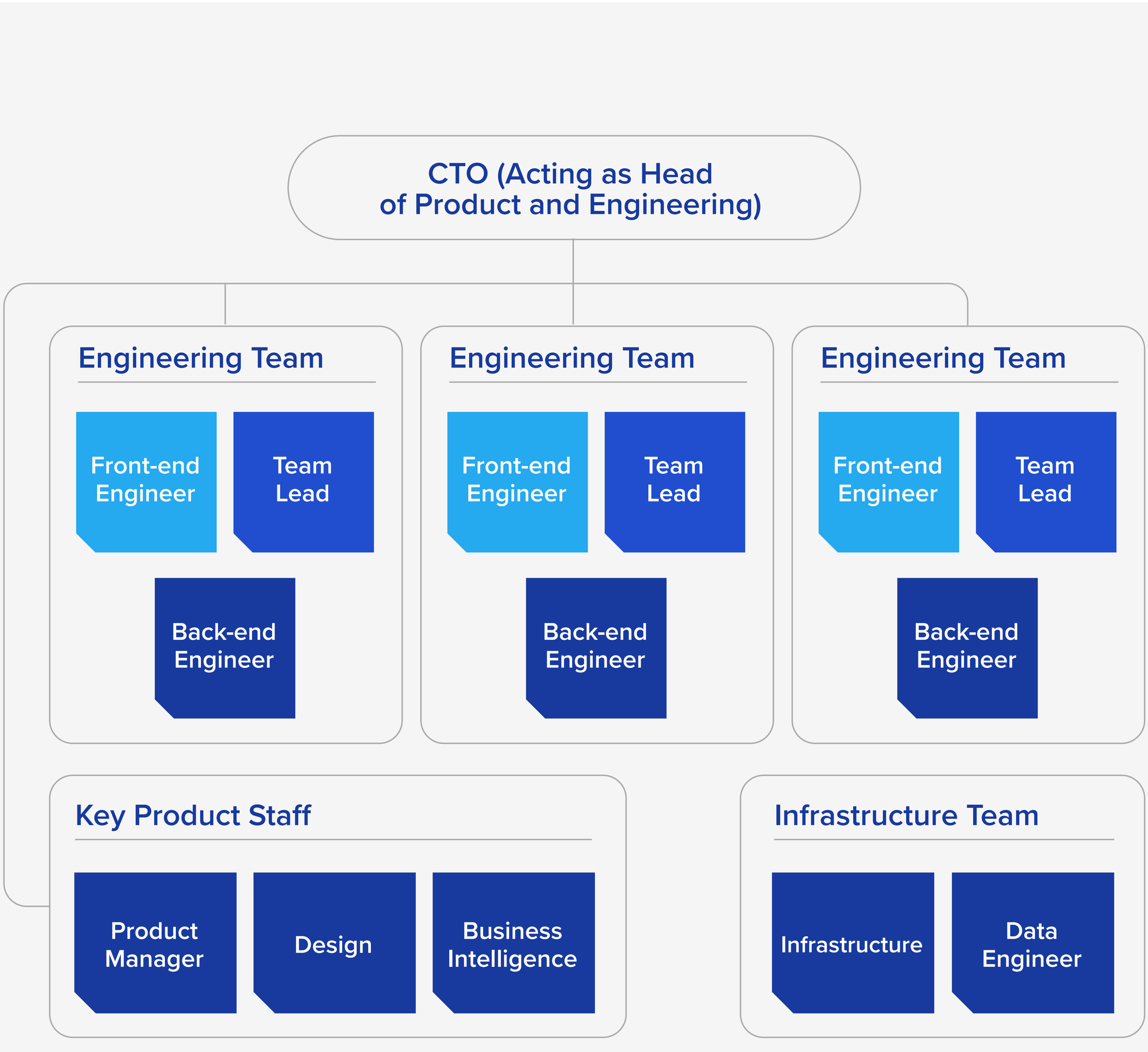
"In order to be nimble and maintain a lower time to market, you need to operate like multiple small companies within the larger organization."

Snehal Kundalkar
Chief Technology Officer, Valence

Building the Team From Scratch at Valence

"When I joined, Valence was testing a beta product, but it needed a lot of work," Kundalkar says. "It was super important for me to revisit key decisions around the technology stack to prepare the product to scale."

Valence is in the early stages of building out its organizational structure, with 14 engineers on three product-focused teams. The company is working this year to increase its engineering footprint, but Kundalkar pointed out that the team is maintaining a flat structure for as long as possible. "In order to be nimble and maintain a lower time to market, you need to operate like multiple small companies within the larger organization," she says. Kundalkar notes she saw this relatively flat Function-centric Engineering Hierarchy work well at Apple during her time there. In this model, each small, independent engineering team reports directly to Kundalkar, and she acts as both the engineering leader and the product leader.



Valence uses a Function-centric Engineering Hierarchy to shorten feedback loops and maintain independent teams.

The downside to building largely independent teams is that silos can develop as a company grows. To keep their bus factor high, Kundalkar has team members rotate so that less-experienced engineers shadow more-experienced engineers to learn about new domains and parts of the codebase. She used this method at Reddit, as the company grew from 250 to 500 people, to ensure that knowledge didn't get lost when a senior engineer left.

Overcoming Talent Acquisition Challenges

One significant difference between management at a relatively unknown startup versus a household name is recruiting. "I didn't realize how much of an upper hand we had when we were recruiting as employees at Apple," she says. "When I left Apple and I joined Reddit, it became clear that smaller companies experience a huge uphill battle with talent acquisition."

Kundalkar began recruiting strong candidates with nontraditional backgrounds and those not based in technology hot spots like San Francisco. She looked for bootcamp graduates, international graduate students, and career changers to help fill roles. She was excited by how much potential she found.

"To find great talent, you have to look at places your competition is not looking. Especially at a startup when your competition offers stocks, bonuses, free food, haircuts, and laundry service."

Snehal Kundalkar
Chief Technology Officer, Valence

"You have to believe in the ability of human beings to expand," she says, adding that some of the skills these unconventional engineering candidates brought in helped strengthen Reddit's product. "Some of the skills they had from their multidisciplinary backgrounds were the same skills our customers had," which gave her team unique insight into building a better user experience.

At Valence, Kundalkar has built a distributed, remote team spanning 12 countries. By leveraging Toptal's global talent network, Valence finds and onboards specialized engineers in days instead of months, stays within budget, and provides excellent opportunities to engineers in places where local jobs might not be as lucrative.

"Through Toptal, we found really good talent around the world, as or more efficient at times than local candidates," she says.

While many startups restrict their options to only local developers, Valence proves that there's more than one way to build a successful engineering team; 80% of its engineers are freelancers and most are international. "To find great talent, you have to look at places your competition is not looking," Kundalkar says. "Especially at a startup when your competition offers stocks, bonuses, free food, haircuts, and laundry service."

Startup or Big Company?

Is it better for engineering leaders to start their careers at a big company with an established structure or to build a startup engineering team without any preconceptions?

"It totally depends on what you want to learn and contribute," Kundalkar says. "There is no right or wrong choice. If you already have management experience and want to get the satisfaction of defining and owning the strategic roadmap of your company, join a startup."

However, for junior to middle management positions, she says, "While companies with name recognition might decorate your resume a little better, these companies require you to have prior management experience." She adds that upward mobility could also be slow in larger organizations. In contrast, managers in startups will get more creative freedom, exposure to new technology, and more opportunity to make an impact. Smaller companies also enable you to "build your management muscle" as the company grows, she says.

Kundalkar says her career is proof that engineers don't have to pick a side and stay with it forever. The engineering management lessons she learned at Apple and Reddit are helping Valence build an effective engineering organization from the ground up.

Conclusion

Each of these leaders' stories illustrates that there are various ways to structure an engineering team for success.

For example:

+ **ActiveCampaign** follows a Three-in-a-Box model designed to increase team autonomy as its business scales.
+ **Toptal** utilizes Stakeholder-focused Squads to build strong relationships between engineers and business stakeholders to ensure consistent delivery of business value.
+ **Cube** allocates teams into a Front-end/Back-end Split Structure with a unique leader overseeing each team.
+ **Cohesion** leverages satellite teams to ensure rapid scale and eliminate the complexity of hiring, onboarding, paying, and managing each team.
+ **Valence** employs a Function-centric Engineering Hierarchy in which each engineering team reports directly to the CTO, who acts as both the engineering leader and the product leader.

Similarly, there is variety when it comes to hiring freelancers versus hiring full-time staff. While each of the leaders in this e-book uses freelancers, they all work with them differently:

+ **ActiveCampaign** uses freelancers to help with specific, narrowly defined projects.
+ **Cube** uses freelancers to fill in gaps in its growing engineering team.
+ **Valence** and **Cohesion** center their teams around freelancers.

No engineering team structure stays the same forever. As an engineering manager, you have to be flexible and solve problems as they arise. You can apply the options we covered in this e-book and adapt them to fit with what works best for your business and desired outcomes.