HackerRank

A DEFINITIVE GUIDE TO
Attracting Engineers in a
'Talent Shortage'

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Every great leader knows that people are the backbone of innovation. It's why the war for talent has never been fiercer. Over the past few years, leading-edge companies across all verticals are building revolutionary software to innovate:

Out of 35,000 folks at Goldman Sachs, for instance, 9,000 are technology employees.

Chipotle is not only hiring IT professionals but also hosting hackathons to boost sustainability.

Retail giant Walmart launched Walmart Labs, which houses over 2,000 "technologists," including developers, engineers, data experts and more.
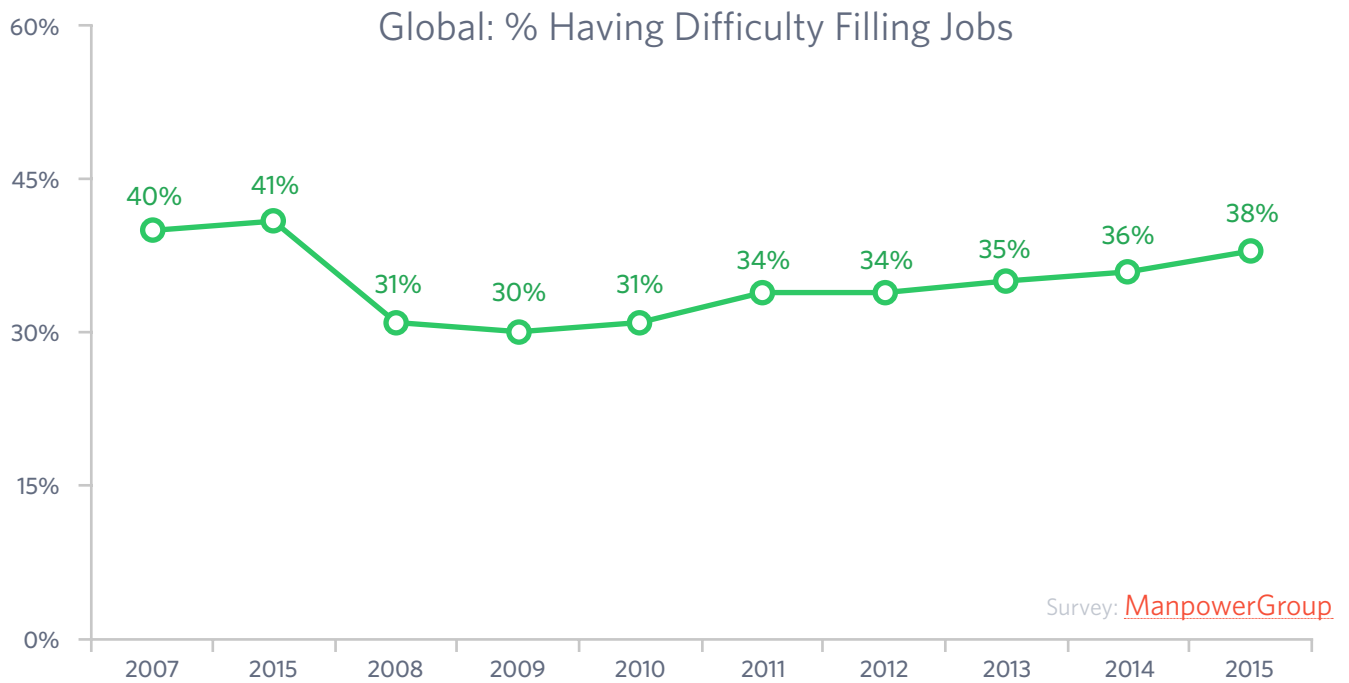
The healthcare industry has seen a 3X increase in tech-driven job postings since 2007, when the HITECH Act passed.

PROBLEM:
Competition for talent is fierce. Too many tech roles are going unfilled.

This demand for engineers is the root of the competitive recruiting environment you are facing today. In fact, since every industry could technically be filed under "tech industry," the concept of a "tech industry" will soon be obsolete.

Computer World reports that there are 8 qualified candidates for every 10 developer job openings in 2013. In the same report, one mobile security firm in San Francisco said they haven't made an engineering hire that didn't have multiple offers--not a single one. Competition is particularly tight in high-growth tech markets. If you're located in the world's leading startup cities, like Silicon Valley, New York, L.A., Boston and Tel Aviv, London, you're likely competing against hundreds of similar startups within a 50 mile radius. Meanwhile, cities without a booming scene, like Little Rock or Milwaukee, are just as difficult because they're generally less appealing to younger talent. As the fabric of society is transforming into a blanket of source code, developers and data scientists reign king.

Global: % Having Difficulty Filling Jobs

Chart data:
- 2007: 40%
- 2015: 41%
- 2008: 31%
- 2009: 30%
- 2010: 31%
- 2011: 34%
- 2012: 34%
- 2013: 35%
- 2014: 36%
- 2015: 38%

Survey: ManpowerGroup

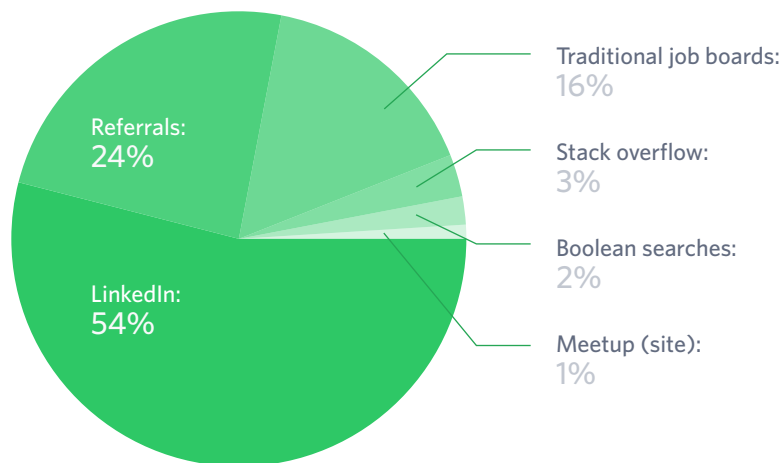## SOLUTION:
Stop doing what every other tech recruiter does.

"Insanity: doing the same thing over and over again and expecting different results."

- Albert Einstein.

Hiring managers across the board are practicing the same techniques: Combing through LinkedIn profiles, poaching candidates through social networks and--worst of all--sifting through thousands of resumes. To build a strong team, companies must stop playing tug-of-war with the same pool of top talent. There are quite a few theories as to why there is a talent shortage today. The only thing that's certain is that employers are struggling to find talent.

Here's an OpenView survey that illustrates the biggest, most overused strategies that tech recruiters use. In other words, here's what not to do:

Tools Tech Recruiters Believe Are Most Effective for Recruiting Software Engiiners

Referrals: 24%

LinkedIn: 54%

Traditional job boards: 16%

Stack overflow: 3%

Boolean searches: 2%

Meetup (site): 1%

By and large, most employers aren't adopting innovative strategies to uncover talent in different pools. Consider a Brandon Hall Group's recent 2014 State of Talent Acquisition Report:

78% of organizations rated their talent acquisition efforts and capabilities as less than highly effective.
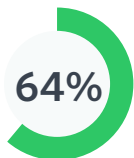
64% of organizations rely on reactionary recruiting processes and operate without even a high-level strategy in place to support hiring initiatives.

The best candidates aren't hanging out on job boards or LinkedIn daily. Traditional resumes and cover letters aren't an efficient or effective way to evaluate a person's skills. This comprehensive guide helps you both understand the current state of technical recruiting and develop a proven strategy to build a winning technical team, no matter where you're located.

One of the biggest challenges for small companies is to attract talent with a limited budget and resources. Here are two proven ways to jump that hurdle:

BUILD A COMMUNITY AROUND YOUR BRAND

You might not be able to compete with Google's fancy campus, but you have something over the rest of the big giant corporations: Personalization and speed. Start-ups have the advantage of limited red tape when overhauling their strategies and hiring methods. You can move fast and emphasize just how influential every single member of your team is to the bottom line and product. Highlight the most unique benefit you can offer.

A 2011 LinkedIn study of more than 2,000 recruiters
found the cost-per-hire is 2X lower for companies
with a strong employer brand.

Take a look at the other key players in your tech space and find your unique voice that differentiates your culture. Is it your commitment to offering health care access worldwide at ZocDoc? Are you passionate about democratizing investment opportunities, like Robinhood? What do you value most that others can't find anywhere else? Convey a sense of community, leadership and pride through your people. It all starts with your own team--they're your biggest ambassadors and the most unique thing about your company.

One great avenue is at the university level. Proactively visiting university campuses to build your brand among students can set your talent funnel up for success. If you don't have the resources to travel to university campuses, you can bring thousands of students to you through University CodeSprints.

University CodeSprints are an online hackathon exclusively for students who are looking to hone their skills and look at potential job opportunities after college. Students from around the world login and solve a set of challenges just for fun and to win prizes. It's a great way to get your employer brand in front of thousands of students without leaving your office.

LOOK FOR SKILL & PASSION, NOT JOB TITLES OR BRAND NAMES

Another way to go against the grain is to spot true skill instead of fixating on job titles or brand names on a resume. For instance, if you're looking for a data scientist, most recruiters spend hours looking for "data scientist" on LinkedIn profiles and resumes.

Folks outside of the tech space often don't realize that the most astonishing achievements in data science weren't accomplished by just one superstar, unicorn data scientist. When data scientist David Hardtke was tasked with building a strong data science team at startup Bright.com several years ago, he couldn't afford to recruit the best data scientist away from the likes of Google and Facebook. But he knew something most data scientist-crazed recruiters don't understand: At its core, it's all about learning how to ingest data using statistical methodology and computational techniques to find an answer.

Most scientific disciplines require this knowledge. So, he hired scientists across disciplines: physicist, mechanical engineer, statistician, astrophysicist–basically anyone who wasn't a computer scientist or data scientist. Because frankly, the latter two most in-demand jobs are far too expensive.

While most recruiter are out competing for the same Stanford alumni data scientists, startup recruiters should look for hidden gems--folks with a mix of aptitude and potential--who don't happen to have a fancy degree.

QUANTIFY SKILLS WITH 100% ACCURACY

Traditionally, resumes have been the go-to source for skill evaluation, but they're not an accurate representation of skills. The 2014 HireRight Employment Screening Benchmark Report reported that 88% of respondents said they spotted a lie on a resume.

As the demand for specialized technical skills has increased, vetting highly specialized technical candidates requires a more calculated process. This explains why the average time to hire has boomed in parallel with specialized jobs.

High-Skilled / Knowledge-Based Jobs Grew 2x since 1983 While Other Jobs Grew just 1.3x

Non-Routine Cognitive Jobs* vs. All Other Jobs Growth USA, 1983 - 2015 (Indexed to Jan 1, 1983)
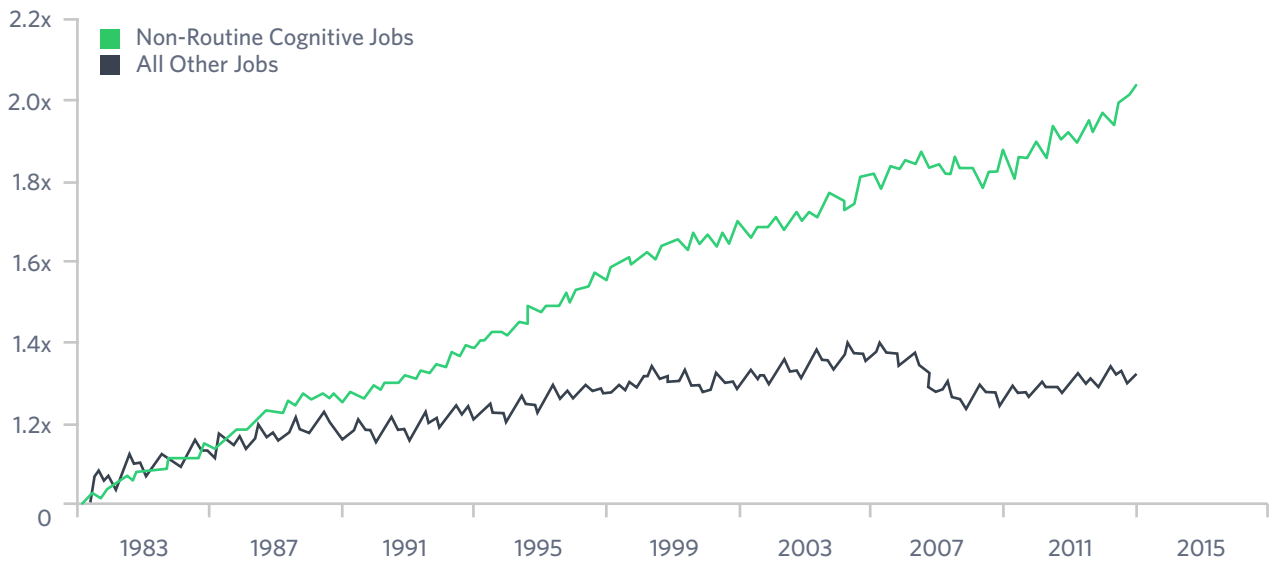
Source: KPCB

*Non-Routine Cognitive Jobs = High-Skilled and Requires Flexibility, Creativity, Problem Solving

As the need for technical roles increases, the need for a more comprehensive screening process is required by companies, thus increasing the time to fill.

> "There's been a marked change in the composition of the workplace in recent years, with a shift away from low-skilled, routine jobs and towards higher-skilled positions requiring more sophisticated skills. Hiring specialized and technical workers requires a more careful – that is, longer – vetting process"
>
> - Glassdoor Chief Economist, Dr. Andrew Chamberlain

Smaller companies don't always have the luxury of time when they're moving fast. Since the recruiting process typically requires hundreds of hours of your engineering manager's time, the cost of hiring can add up.

The good new: Given the right automated screening tools, you can evaluate candidates with 100% accuracy using data analytics.

To optimize for accuracy in your screening process

Pinpoint the technical skill that you really need. For example, if your team is in dire need to find a database specialist, craft a challenge that only the best database experts would be able to crack.

Craft a technical challenge that's highly relevant to your business and the open position.

Incorporate the challenge in your screening process to filter out candidates who aren't skilled enough to solve your unique technical challenges

Following the example of a database specialist, here's a sample CodeChallenge problem statement from a finance company. It asks candidates real-world challenges related to the stock market. Here's a sample CodeChallenges problem statement from a finance company. The real-world challenge relates to the stock market:

PROBLEM STATEMENT

Historical Values of the day's highest price for a stock

A time series of a stock's highest price during a trading day (at the New York Stock Exchange), is provided to you. In each test case, the day's highest prices is missing for certain days. By analyzing data, try to identify the missing price for those partiular days.

INPUT FORMAT

The first line contains an integer N, which is the number of rows of data to follow. This is followed by N rows of data, each of which contains a time-stamp in the first column and the day's highest price for the stock in the second column. There is a tab delimeter between the two columns of data. There are exactly twenty rows in each input file, where the day's highest price is missing. The missing prices are marked as "Missing...1", "Missing...2"..."Missing...20". These missing records have been randomly dispensed in the rows of data.

OUTPUT FORMAT

The output should contain exactly twenty rows, each containing your predicted value, for each of the missing values (Missing_1, Missing_2... Missing_20) in that order.

CAST A WIDER NET

If you're looking to find the best talent, don't fish from the same pool that every other tech recruiter is fishing from. The key to successfully casting a wider net is to think like a developer and go where the developers hang out.

Most--if not all--developers are obsessed about solving challenges. It's the nature of their work:

> "We're an optimistic bunch. As soon as we hear requests or calls…we immediately start to think about solutions"
>
> - Brent Jenkins, Senior Director, Engineering, Ticketfly.

ONLINE HACKATHONS, AKA CODESPRINTS

As a result, online hackathons--also known as CodeSprints--are a great sourcing tool for large companies. They're the best kept creative secret for filling your talent pipeline with relevant candidates. The most passionate developers are drawn to online hackathons because it's a chance to improve their own skills. In the process, hosting a hackathon that's made up of tailored CodeChallenges allows you to both source and screen candidates instantly.
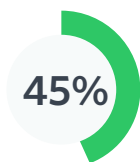
45% of software engineers said in a recent Microsoft survey, that a position's relevance to their individual background was the top factor in deciding whether or not to respond to a recruiter's outreach. By crafting a set of tailored CodeChallenges, you can draw in developers that are most relevant to your field.

SUCCESS STORY: CISCO ATTRACTED OVER 6,000+ SOFTWARE AND SECURITY ENGINEERS

Cisco, the world's largest provider the core infrastructure of the web, was looking to hire more software and security engineers. So, the recruiting team partnered with HackerRank to host a 2-and-a-half day online hackathon, in which nearly 5,000 engineers came to the CodeSprint for a chance to win top honors in the general Cisco Software Challenge -- another 1,700 engineers competed in the Cisco Security Challenge.

Each challenge consisted of 5 problems tailored to Cisco's desired skillset. Most importantly, almost all of the competitors expressed a clear interest in working for Cisco. In 2.5 days, Cisco was able to not only cast a net to over 6,000 relevant engineers but also accurately evaluate their skills using automatic CodeChallenges...automatically.

CareerCup founder Gayle Mcdowell, who has consulted for many top Silicon Valley startups, finds that the pure act of automating CodeChallenges helps her get through more candidates, faster. Here from her directly:

> *It allows you to get through a lot more candidates faster, and therefore you can cast a wider net and identify hidden jewels--people who didn't look good on paper but are fundamentally very skilled. HackerRank has a fantastic library of questions, from easy to difficult, that allow me to create a really great portfolio questions for candidates. You can tailor the question to the exact kind of candidate you're trying to fill*

SHOW OFF YOUR INNOVATIVE TEAM WITH AN ENGINEERING BLOG

It used to be exciting to be able to play ping pong at work. Now, every startup within a 100 mile radius offers the same old perks:

Game Room
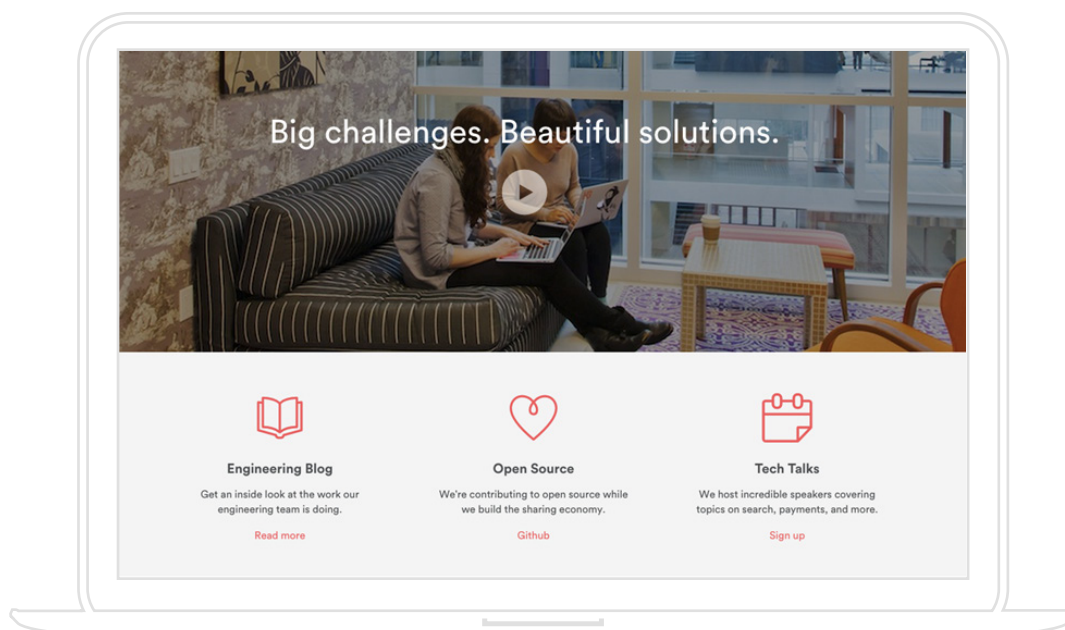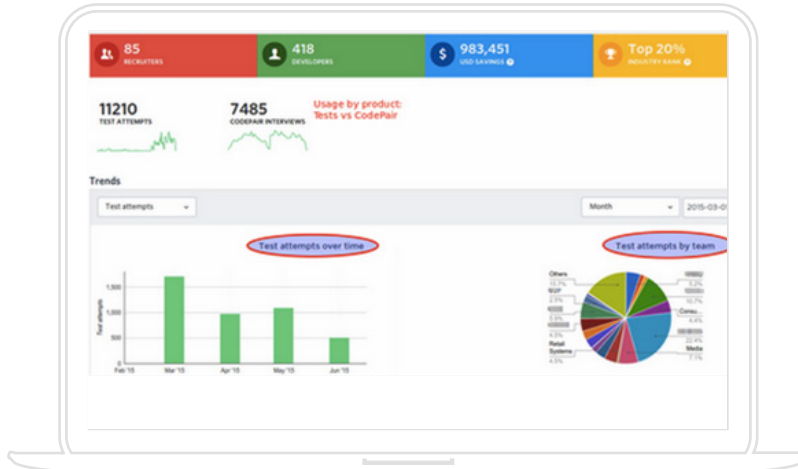
Free Snacks

Health Memberships

Dogs At Work

Casual Dress

The best engineers don't work at a company just for the free food or ping pong. Engineers who are truly passionate about their craft are looking to work in a team that compliments their passion--their desire to change the world with technology. Give engineering candidates a platform to be part of something bigger than themselves.

From Cisco to AirBnb, every top engineering team has a website dedicated to the engineering team about their latest innovations. AirBnb does a great job providing a portal for engineers to learn more about what they'd be doing if they worked at the most cutting-edge travel company.

Big challenges. Beautiful solutions.

Engineering Blog
Get an inside look at the work our engineering team is doing.
Read more

Open Source
We're contributing to open source while we build the sharing economy.
Github

Tech Talks
We host incredible speakers covering topics on search, payments, and more.
Sign up

TAKE DATA-DRIVEN ACTION

When you're recruiting for a larger team, over time, you start to accumulate a rich treasure trove of data that can help you make better long-term decisions for your engineering team.

Companies--as a whole--have increasingly turned to Big Data to forecast and plan business decisions. In the past year alone the amount of organizations with deployed data-driven projects has increased by 125%, according to an IDG Enterprise study on Big Data Analytics. Implementing a robust data analytics system into your talent acquisition program can help attract more candidates, faster.

For instance, if you use HackerRank for Work, which integrates with top Applicant Tracking Systems (ATS), like Greenhouse and Taleo, your recruiting team can easily see key insights like:

ROI CALCULATOR: See exactly how much money you're saving by automating your recruiting through CodeChallenges.

INDUSTRY BENCHMARKS: Get an inside view of how your recruitment team is performing against other companies based on their size, industry, and location.

RECRUITER PERFORMANCE: Detailed stats for every recruiter your team gives you direct insight into who is sourcing from the best channels and how their hiring funnels compare against each other. You can also measure which screening questions are the most effective.

Having a dashboard that beautifully displays your recruiting activity overtime is a great way to see which questions and recruiting channels are truly working. Over time, you can measure how long it takes your team to assemble a full funnel for any given job title, making your yearly talent acquisition strategy more predictable. Data-driven decisions can help you make more strategic and accurate decisions and further expand your pool of talent.

The war for talent is aggressive, but talent leaders who combine a creative approach and data-driven platforms will be able to source wider, more accurately and successfully. People are the biggest asset and investment for every successful company, from startups to conglomerates. Investing in innovative strategies to go beyond traditional recruiting methods is the key to overcoming the--so called--talent shortage.

HackerRank

HackerRank is a platform that ranks engineers by coding skills and helps companies find hidden talent. With a rapidly growing community of over 1 million engineers, HackerRank aims to replace resumes with code challenges and create a meritocratic way to assess skill. Over 1,000 companies use HackerRank to build strong engineering teams.