

WORK

EDITED BY

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SANDBERG**

COO, FACEBOOK
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Silicon Dreams

GET A LEG UP
ON THE HOTTEST,
BEST-PAYING,
MOST FUN,
MOST IMPACTFUL
JOBS OUT THERE
WITH COSMO AND
LEANIN.ORG'S
GUIDE TO
WORKING IN
TECHNOLOGY.

PROF-STYLIST: ALLIE KIRCHER

PHOTOGRAPHED BY ERIC HELGAS



OUR CAREERS EDITOR HOSTS GIRLS WHO CODE AT FACEBOOK HQ.

FIND YOUR PEOPLE

Feel alone in a sea of testosterone? Members of Lean In Circle's Computer Science and Engineering chapters talk about how much it helps to connect.

"JUST GETTING MY BOSS ON BOARD WITH MY ATTENDING THE CIRCLE WAS A GREAT FIRST STEP IN TAKING OWNERSHIP OF MY CAREER."

—CAROL SURBAN, DIRECTOR OF CLIENT INFORMATION SERVICES, HONOLULU, HI

"I LEARNED TO 'JUST SAY YES' TO RUNNING A TASK FORCE RATHER THAN QUESTION IF I WAS THE RIGHT PERSON FOR THE JOB."

—ANNETTE WILKIE, PLATFORM EXECUTION LEAD, PORTLAND, OR

"MY CIRCLE INSPIRED ME TO SIGN UP FOR GRAD-LEVEL CLASSES AS THE ONLY UNDERGRADUATE (AND KICK ASS TOO!)."

—STEPHANIE MECHAM, STUDENT, ANN ARBOR, MI

"I HAD A 2-YEAR-OLD AND A NEW-BORN AND FELT UNSURE ABOUT HOW TO MOVE FORWARD. MY CIRCLE GAVE ME THE CONFIDENCE TO TACKLE JOB HUNTING."

—SARAH MANCOLL, POLICY DIRECTOR, TAKOMA PARK, MD

JOIN US!

W

WHEN APPLE released its health app, it could track weight, blood sugar, medication use, cholesterol, and virtually every other metric a person might need to monitor...except menstruation. The creators forgot—or perhaps ignored—a basic bodily function experienced by half the planet. It took a year, but Apple finally corrected its oversight.

This is just one example of why we need more women in tech.

The world's earliest programmer was Ada Lovelace—yes, a woman!—who in the 1840s wrote the first line of computer code. But despite early gains by female computer scientists, the tech industry looks much more male than it once did. Women hold just 26 percent of jobs in computing. They make up only 18 percent of the computer science graduates—a number that has dropped from

35 percent in the mid-1980s. Women who do go into these fields often say they experience a negative workplace climate and feel isolated. When things get tough, they don't have enough role models to turn to for encouragement or support.

Reaching equality is the right thing to do. And it's also the *smart* thing to do. When we leverage the power of diversity, companies and teams perform better: They are more innovative and bring in more revenue and profits. What amazing inventions, apps, or solutions to the world's problems are we missing simply because we're not tapping women?

Tech jobs enable people to have profound impact on society by building new products that make the world smaller and more connected. Tech jobs are exciting, fast moving, well paid—and fun. They're also wide-ranging: technology is important in industries

from music to manufacturing. And there are a lot of them: By 2022, there will be 1.2 million computer science job openings in the U.S. but not nearly enough talent to fill them.

If you're a woman in computer science—or if you might want to be—you can find support through a Lean In Circle. We hope you'll join or start one at LeanInCircles.org/cse. I didn't always dream of working in tech...but I wanted to have an impact and there's no better way to do that. Technology is an agent of change—a force that shifts the way we live for the better. Today, all women need tech. And tech needs women.

Sheryl Sandberg
Editor
COO of Facebook and founder of LeanIn.org

YES, THIS IS TECH

And no hoodie required! This industry is way bigger and more varied than the stereotypes. We got advice on breaking in from the brightest minds around.

BY JUDITH OHIKUARE AND DANIELLE KAM



Funding

KATHRYN FINNEY
Founder and managing director of DigitalUndivided
New York, NY

Finney studied women's studies and poli sci, then earned a graduate degree in epidemiology and first worked in that field. Always a lover of fashion and technology, she started a hit blog called the Budget Fashionista as an outlet and later served as editor-at-large at BlogHer. Seeing the power of tech entrepreneurship firsthand led her to start DigitalUndivided, which trains and supports black and Latina founders.

"The term founder is such an important one in the tech world. Few entrepreneurs of color realize that in this space, trying to build something and starting your own company—even if it fails—is still considered better than working for someone else's. Or they may feel less comfortable taking that risk. To get on that path, it's crucial to be linked into networks that can help you grow and be successful."

COURTESY SUBJECT



Holograms

DONA SARKAR
Principal product manager of developer engagement, Microsoft
Seattle, WA, and New York, NY

Sarkar, who studied computer science and started as a software developer, now works with a team that uses holographic tech to create 3-D visualizations for graphic artists, set designers, musicians, and even the NFL.

She is also building a 3-D app that helps fashion designers tweak their creations without resewing them.

"The idea of a coder locked in a room is a myth. On a typical day, I code, meet with the marketing team, and visit clients. This job is about solving problems for humans, so you need to be able to deal with humans."

Fashion

NILOFER VAHORA
VP of licensing and product innovation, Rebecca Minkoff
New York, NY



Gadget-addict Vahora earned an MBA and worked on innovation and product strategy for Kate Spade &

Company before joining Rebecca Minkoff, where she integrates technology into the company's line. Exhibit A: its line of chic charging wristlets and wallets.

"The tech industry is the greatest offender of 'shrink it and pink it' design: starting with men as the primary users of a product, making it smaller and pink, and then assuming women will use it the same way. [When it comes to wearable tech], start by understanding what your consumer likes and wants."

COURTESY SUBJECTS (4); GETTY IMAGES.



Cars

JACKIE BIRDSALL
Senior engineer, Toyota
Los Angeles, CA

Birdsall fell in love with cars as a teen and majored in mechanical engineering. The fuel cell vehicle team, which she is part of, works on the North American launch of the Mirai, a hydrogen-powered car. They oversee the complicated logistics of rolling out such a cutting-edge car, including shipping, servicing, fueling, and meeting legal codes.

"Buy an old car—one without computer diagnostics software—and practice taking it apart and putting it back together. Engineering is moving away from nuts and bolts and combustion, but understanding vehicle dynamics is not going anywhere."

Software Development

JESSICA MCCAY
Lead software engineer, Under Armour
Austin, TX

An undergrad philosophy major, McCay later enrolled in a university computer science program, including job training. She worked on a start-up acquired by Under Armour, where she leads the team that builds mobile apps like MapMyRun.

"Once you get the job, you've only just begun the learning part. To keep up my skills, I like to read tech blogs and online tutorials and attend meet-ups. In a town like Austin, there's even a meet-up for mothers who code."



Anthropology

GENEVIEVE BELL
Intel senior fellow and vice president of the corporate strategy office
Portland, OR

Bell was a professor at Stanford when Intel recruited her in the '90s. As a "full-time anthropologist and part-time futurist," she and her team study people in daily life to see what they need and predict what tech they'll want in the future.

"The growth spaces are in data and semi-autonomous machinery. That opens up conversations about ethics and morality to behavioral psychologists, historians, and economists—not only mathematicians."



Movies

VICTORIA ALONSO

EVP of physical production and executive producer, Marvel Studios, Burbank, CA

A theater and psych major, Alonso's first job in L.A. was as a studio tour guide and page. She worked her way up the ranks and now helms the production process at Marvel, including design, storyboarding, costumes, special and visual effects, and post-production for movies like *The Avengers* and *Guardians of the Galaxy*.

"Know what your nonnegotiables are. Early in my career, my nonnegotiable was having a job, period. At other times, it was working on films with a mission. A few years ago, I considered saying no to a superhero movie filming in L.A. but said yes because my non-negotiable was spending more time with my family. That film became *Iron Man*. Open your heart to something that may not seem perfect but is what you need at that moment."



Robotics

CYNTHIA BREAZEL

Founding director of the Personal Robots Group at the MIT Media Laboratory and chief scientist at Jibo, Inc., Boston area, MA

For Breazeal, a spark lit by seeing R2-D2 in the original *Star Wars* led all the way to a PhD in electrical engineering and computer science from MIT, where she is currently a professor. She developed the field of "social robotics"—giving machines human-like qualities. She's also an entrepreneur, cofounding Jibo, Inc., a company that designed a household robot that is a helper and companion.

"Make a list of your passions or the problems you want to solve. Then research what resources are available to you, from community college courses to MIT online classes to app-making tools in the Android store. If you're in college, schoolwork isn't enough—getting involved in extracurricular projects is what allows you to test your creativity and gain mastery over the tools and techniques you're studying."

Government

MAYA SHANKAR

Senior adviser at the White House Office of Science and Technology Policy and chair of the Social and Behavioral Sciences Team (SBST) Washington, D.C.



Shankar, a former violinist, earned a PhD in cognitive psychology. A conversation with a former undergrad adviser spurred her to pitch the idea of SBST to her current boss. Her team often collaborates with agencies to implement small technological "interventions"—say, increasing college enrollment by sending text messages with pre-matriculation info to low-income teens.

"It is so rewarding to be able to apply behavioral research insights to federal programs and then see improvements on such a large scale. That is the special advantage of working in government."



Education

SARAH FILMAN

VP of curriculum, Code.org, Seattle, WA

Filman began her career as a program manager at Microsoft, working on products like its OneDrive cloud storage service. But she had a passion for teaching too and took a leave of absence to teach at Girls Who Code's immersion program. That set her up for her role developing school curricula at the nonprofit Code.org, which creates computer science lessons.

"My current job is the perfect hybrid of technology and education. I bring extensive management experience and hard computer science skills to my team. But because I don't have a ton of in-classroom experience, Code.org would never have hired me if I hadn't pursued interests outside my normal job, like Girls Who Code."



Space

RACHEL BINX

Data visualizer at NASA Jet Propulsion Laboratory, Los Angeles, CA

Binx, who studied math and art history, creates visual displays of quantitative info for the operators of NASA's spacecrafts. She's also worked as a web developer and started a set of businesses that sell gifts using maps and data as art.

"After working in Silicon Valley, I got burned out on apps. Tech is everywhere, not just apps, so if you're passionate about something, go get involved in the tech side of it. No one thinks, 'I'll be a web developer at NASA!'—but we need people too."

Security

CHRISTINA MORILLO

Vice president in technology and information risk, Morgan Stanley, New York, NY



Morillo's family couldn't afford a computer—so she studied IT and built her own. At Morgan Stanley, her team works to

keep the financial giant's data safe. She also volunteers with Black Girls Code and runs WOCInTechChat.com.

"Information security is an exciting field for people who like to solve problems. Salaries are skyrocketing because demand exceeds supply. Your school or company probably has an IT security program, so ask the chief information security officer or chief information officer what tools they use and if they offer training."



E-Commerce

SUKHINDER SINGH CASSIDY

CEO, Joyus, San Francisco, CA

Singh Cassidy started out on Wall Street before moving to London to work for British Sky Broadcasting. She also ran the international division of Google for six years and served as the CEO of Polyvore. In 2011, Singh Cassidy founded Joyus, a lifestyle e-commerce site for women. Last June, she also launched The BoardList, a talent marketplace that connects tech CEOs with women leaders they might want on their boards.

"To break into tech, surround yourself with entrepreneurs and entrepreneurial opportunities. Use Women 2.0 to find out where the action is in your area. Think about how you might improve a website you love. Even if you never create the service you imagine, interviewers will want to know you can think through consumer problems."



Streaming Television

BEATRICE SPRINGBORN

Head of original programming, Hulu, Los Angeles, CA

After starting out as a journalist, Springborn zigzagged into entertainment, working her way up to manager of development for movies at Pixar. At Hulu, she's a top exec who reads scripts and develops and markets projects like *The Mindy Project* and *11.22.63*.

"Know the style of the company you want to work for. 'Old Hollywood' is hierarchical. Tech companies are changing that. At Hulu, few people have assistants, and we have an open-office floorplan. Things here are democratic. I find it completely refreshing."



Shopping

SANDY CONRAD

SVP of merchandising in electronics, HSN, St. Petersburg, FL

Fascinated with how and why products make it to store shelves, Conrad majored in marketing at Miami University in Ohio. At HSN, her team combs the marketplace for up-and-coming tech gizmos. Electronics is one of HSN's largest divisions, and women make 75 percent of the purchases.

"Retailing is a career where you can get experience without an advanced degree. You can learn a lot in a brick-and-mortar environment, especially one with an online retailing component."

COURTESY SUBJECTS (2). SHANKAR: REED SCHULER; GETTY IMAGES.

COURTESY SUBJECTS

BREAK THE BRO CODE

Maybe #NotAllMen in tech are on board the equality train, as new research from *Cosmo* and *Popular Mechanics* shows. But change is in the air.

BY HANNAH SELIGSON

WATCHING the Academy Awards last year, Cindy Robbins was struck by Patricia Arquette's acceptance speech for best supporting actress. After making the requisite round of thank-yous, Arquette went there: "It's our time to have wage equality once and for all and equal rights for women in the United States of America," she said.

Robbins is the executive vice president who heads up global human resources at Salesforce, a cloud computing software company in San Francisco. She began to wonder: Are we paying women fairly? With her colleague Leyla Seka, senior vice president and general manager of Salesforce Desk.com, they started reviewing salaries, one by one, for 17,000 employees, and they found some women *were* being paid less than their male counterparts (although there were also some men being paid less than women). Starting early this year, \$3 million will go toward evening out paychecks. CEO Marc Benioff "was a supporter from the start, and action began quickly," says Robbins. "He agreed that equality was a core value of the company."

It's not a core value traditionally associated with the technology sector, where 20something men are abundant but gender awareness—and women themselves—is often in shorter supply. Women made up just 26 percent of the computing workforce in 2013, and one study of Silicon Valley start-ups found only 12 percent of engineers are women. On the funding front, it's even more dismal. By some accounts, only 7 percent of investor money goes to women-led start-ups. Michael Moritz, chairman of the powerful VC group Sequoia Capital, recently said his firm is not "prepared to lower our standards" to invest in women.



Moritz later backpedaled on those remarks. But a new survey from *Cosmopolitan* and *Popular Mechanics* suggests that, for such a future-looking field, some attitudes still seem stuck in a time warp. Eighty-three percent of men said their workplace provides equal opportunities, but only 59 percent of women agreed. Nearly 1 in 3 women in tech feels they are treated differently than male coworkers, and the vast majority of those women say it holds them back. In contrast, only 21 percent of men say women are treated differently...and nearly half of them think the difference is that people are nicer to women. "I'm amazed at how every woman [says] she had to work twice as hard as the men just to be accepted and seen as a worthwhile coworker," one respondent wrote. "Perhaps these women are missing the fact that a lot of men are just naturally stronger and more attuned to what is needed to succeed in the workplace, so they only seem to be working half as hard as women." *Oof.*

The happy news is that a lot of other guys get it, including leaders like Benioff who are in a position to move the needle for women. In Silicon Valley and beyond, from start-ups to tech titans like Google, Facebook, Intel, and Dell, companies are changing policies on how they recruit and hire, the benefits they provide, and the subtle messages they send in the office...all in an effort chip away at bro-tech culture. "If you want to be a good leader as a young man, you have to be able to understand the challenges women face," says Kunal Modi, 31, a management consultant in San Francisco. "You aren't going to be able to manage a high-performing team if you don't," he says. "If you reframe it like that, not just as something you are doing on behalf of women, then you really start to turn the conversation."

Bringing More Women On Board

The irony—tragedy, really—is that the tech sector is well-poised to be a bastion of girl power. "It lends itself to equality because of the requirements of human capital. It's not a field that requires brute force or physical labor in a traditional masculine way," says Rachel Payne, CEO of the video platform company Prizma.

It's only outdated stereotypes that make people think women are less suited to the field. In our survey, nearly one-third of men say guys have more of a "natural inclination" toward technology than women do; only 17 percent of women agreed. Those biases often turn up as our preferences to hire people who look, sound, and act like us...or who look, sound, and act the way we think a computer scientist should look or act. That is to say, like the brogrammers of HBO's *Silicon Valley*, who are almost all young, white, male, and socially awkward.

Four years ago, Brent Grinna had only two women on his 14-person team at EverTrue, a nonprofit fund-raising software company in Boston. Today there are 26, comprising 42 percent of the workforce. Three out of 5 of the company's front-end engineers are women as well as 60 percent of the sales team. Grinna traces the influx to the hiring of Elisabeth Carpenter, his chief operating officer. "My sense was that once we had a strong female executive like Elisabeth on our team, more women were not only more likely to apply to positions at EverTrue but also more likely to accept offers," Grinna says.

Men who've worked with women in senior management at technology companies overwhelmingly say those women are no worse or better at their jobs



THE GOOD

93%

OF MEN IN TECH SAY WOMEN MANAGERS ARE NO BETTER OR WORSE THAN MALE MANAGERS.

51%

SAY WOMEN AND GIRLS ARE NOT ENCOURAGED ENOUGH TO PURSUE TECH FIELDS.



THE BAD

29%

OF MEN SAY GUYS HAVE MORE OF A "NATURAL INCLINATION" TOWARD TECHNOLOGY THAN WOMEN DO.

26%

OF MEN WHO THINK WOMEN ARE TREATED DIFFERENTLY IN TECH SAY WOMEN DON'T HAVE TO WORK AS HARD TO SUCCEED.



THE UGLY

12%

OF MEN THINK IT'S A PROBLEM THAT WOMEN FILL FEWER THAN HALF OF TECH ROLES.

41%

OF MEN IN TECH HAVE OVERHEARD A FEMALE COWORKER CALLED A BITCH. 15% HAVE HEARD A WOMAN CALLED A SLUT OR A WHORE.

than men are—it simply depends on the person. More than 80 percent of men in tech say they've learned from female coworkers, 35 percent have been mentored by women, and several respondents effusively praised their female bosses. But to get more women in leadership roles, recruiters realize their practices have to change. "If we don't have enough female or African-American candidates, the recruiter or HR manager isn't doing their job," says Stacy Brown-Philpot, COO of TaskRabbit in San Francisco.

Natasha Mohanty, who worked at Google for eight years as an engineer, found that unconscious bias was embedded in the hiring process. "Interviewers would say things like, 'Imagine you are playing a two-player video game.' It's an intimidating problem to solve if you've never played a game like that," says Mohanty, now chief technology officer at Prizma. "People in this field pride themselves on being merit-based, but it's only about merit if you give everyone an equal opportunity."

Today, those kinds of interview questions are off-limits at Google. Some companies, taking note of studies that women tend to overly scrutinize job listings, have pared down ads in hopes more women will picture themselves in the role even if they don't meet 100 percent of the qualifications. At others, more women have been invited to write job descriptions and conduct interviews to weed out language perceived by candidates as aggressive and masculine.

Fail to hire enough women at Intel and your annual performance bonus could be on the line. Reviews are now based in part on meeting a goal that 40 percent of new employees be women, African-Americans, Hispanics, or Native Americans. "Engaging men and women of all backgrounds is critical to realizing our full potential," says Barbara McAllister,

director of strategy and external alliances. To make sure there's enough talent to meet those ambitious goals, the company has committed millions to everything from scholarships in Oakland schools to investments in women-led businesses to sponsorship of women's gaming teams.

Keeping Women Workers Happy

Getting women in the door isn't enough for the technology sector—companies have to keep them. The obvious first step is tackling sexual harassment (in our survey, 48 percent of men working in tech admitted to referring to a female coworker as dramatic, emotional, pushy, or a bitch, slacker, suck-up, diva, prude, slut, whore, or pussy). It also means starting conversations, often through formal training programs, to identify and correct more subtle practices that make women feel unwelcome.

Dell is the first in the IT industry to implement a program known as MARC (Men Advocating Real Change), an initiative from the nonprofit organization Catalyst in which leaders commit to a series of actions: training on gender blind spots, mentoring at least one female coworker, and taking part in coed discussion groups to identify and change unconscious biases. Doug Hillary, vice president of the Performance Analytics Group at Dell, recalls that one manager, after going through the training, started to question the way that he was scheduling travel. He hadn't considered that women might feel unsafe landing in the middle of the night in unfamiliar locations.

At the two-year-old start-up Earnest, a lending and student-loan refinancing company in San Francisco, nearly half of the 181 employees are female. "We wanted to eliminate a certain connota-

tion that we had a bro culture," says general counsel Beth Stevens. Three male managers made a point of attending a Lesbians Who Tech summit last year. And the company changed the name of a weekly company-wide get-together from Jank 'n Drank—a ritual at tech firms that combines drinking and coding—to Wednesday Night Dinner. Says Stevens, "Now the event welcomes everyone, not just those who code and those who drink."

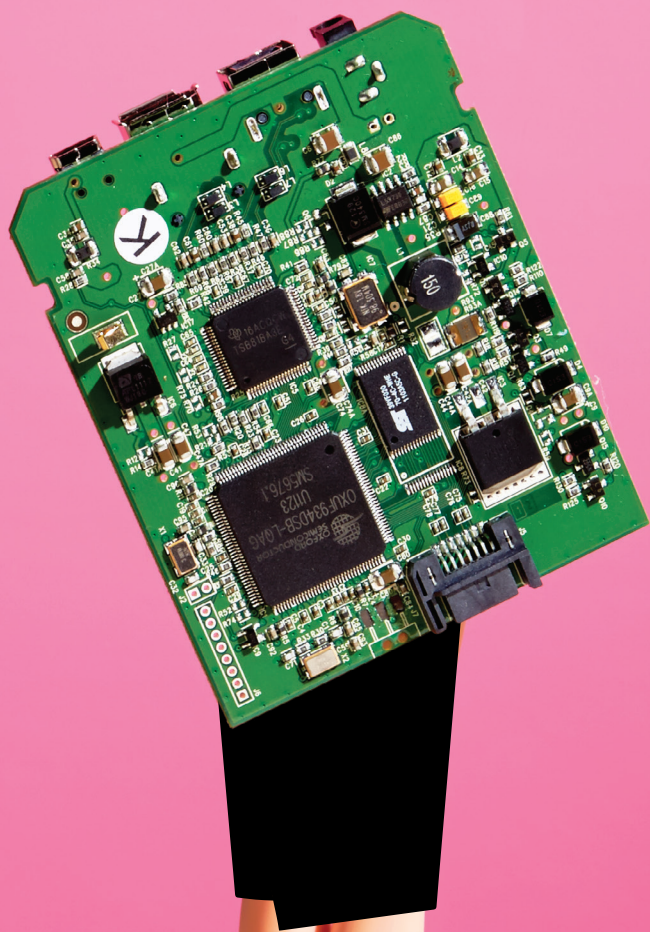
Firms have also focused on retaining women after kids enter the picture. When Google extended its paid maternity leave policy from 12 to 18 weeks, the rate of women who didn't return was reportedly cut in half. Netflix offers up to one year of parental leave, and Spotify gives both parents six months of fully paid leave any time before a child's third birthday. Twitter announced a few months ago that it would cover the costs for mothers who are traveling for work to ship breast milk home.

"WE WANTED TO ELIMINATE A CERTAIN CONNOTATION THAT WE HAD A BRO CULTURE."



Now the focus turns to making sure employees know they can use these benefits without harming their career. Facebook founder Mark Zuckerberg set a high-profile example by recently taking two months of paternity leave, updating followers with posts and photos of his newborn daughter.

The message is that equality is now everyone's topic to take on. "It is all of our responsibility as leaders—not just women, not just men—to make sure that our environments are inclusive and respectful," says Hillary, the Dell executive. "Some of this stuff is achingly simple: Take a group of people who are interested, share your experiences with men and women, and have an open and honest dialogue. You will learn a lot about your own style, about what motivates your people, and how you could work better on both those fronts. Honestly, I don't think it's that hard. You just have to have the courage to initiate the dialogue." ■



START UP YOUR START—UP

It's easier than ever to launch your own tech business. These app innovators tell you how.

BY SARA AUSTIN AND LESLIE YAZEL

Embrace an Idea

“Find something that you know a lot about and that you’re really fired up about,” says Shaan Pruden, senior director, partnership management at Apple, who oversees the company’s relationships with app developers. One starting point: Think about what’s bugging you. Robyn Exton founded the lesbian dating app HER after using a few terrible dating sites. “They were all built for men. It was about whom the closest person was that moment,” she recalls. “A lot of them would have guys with profiles asking for a threesome or trying to convert you, and it was really frustrating.” Ruzwana Bashir was driven to cofound the activity-booking app Peek after spending 20 hours researching things to do for her upcoming trip to Istanbul. “I thought, Wouldn’t it be great to have this one-stop shop where I can book and buy and all these things, click, it’s done?” she says.

Don’t Sweat the Skills You Lack

Don’t know how to code? No computer science degree? It’s okay. “You don’t have to be an engineer or even a designer. Everything that I have learned has been through my own experience with other designers and other engineers and having a strong grasp on what is happening in the industry right now,” says Karen Poole, who cocreated the mobile app Steller, which lets users make virtual storybooks with

text, images, and video. “It can be intimidating,” she adds. “Don’t be scared.” Taking an online coding class in order to learn the basics—or just the lingo—can be a great way to build your confidence, even if you don’t plan on being in a technical role at the company. “Just the tiniest amount of information is going from zero to a hundred,” says Exton. “I knew about the [online] dating industry, but I didn’t know anything about coding. I had been hearing people talk about CSS and HTML and pica, and none of it meant a thing. And then suddenly seeing all these pieces fit together and what different languages are used for and what back end and front end are—that was a big change.” She studied coding at night using language-learning schools like Codecademy, then worked to build her app with a small team. “The day we submitted it to Apple was the day that I quit my day job,” she says.

Learn What Else Is Out There

Are there other ideas similar to yours in the App Store? If so, how could yours be better? “Keep an eye on what other people are doing in the app space, even if it’s not your category,” says Pruden. Maybe you’ll see “this really exciting way of onboarding a customer or really interesting use of animation. Stay current with what the latest and greatest [technologies] are,” she advises. There were other photography apps on the market when Poole came up with Steller, but she saw a gap in what was out there and wondered,

“What would it look like if people could put these photos and videos together in a concise way that was created for viewing on the mobile phone and also had a beautiful, almost magazine feel to them?” After seven months of prototypes and mock-ups, she assembled a team of developers and decided to go for it.

Find Your Soul Mate

Yes, you could be a solo act, but most developers interviewed for this article strongly suggest finding a partner...or two. Bashir’s cofounder, Oskar Bruening, has a degree in fine art and two degrees in engineering from MIT. “Pretty much everything he can do, I cannot do,” she says. “Building a start-up is like making a meal: You can’t have just one ingredient. In companies that have sole founders, it’s very hard emotionally as well as the need to do all this different stuff.” Target these three skill areas for your app dream team, says Pruden: technical savvy, artistic design ability—“because it has to look great”—and business acumen. Think about your weaker areas. Do you need someone with a strong design eye? Who can code? Who has great industry or business contacts? You may need to reach out to a stranger or two. “If you are in design school and you have this amazing idea, at your school, is there an engineering school?” says Pruden. “Go make a friend. Partner up with folks, and create that small team of people who can go change the world.”

Make Friends Before You Make Money

“If you’re talking about building your network and you’re already trying to raise money, this is

“THE WAY THE INDUSTRY WORKED BEFORE... A SINGLE PERSON COULD NEVER BREAK IN. NOW ANYONE CAN GET A GREAT IDEA AND PUT IT UP ON THE APP STORE.”

—SHAAN PRUDEN, SENIOR DIRECTOR, PARTNERSHIP MANAGEMENT AT APPLE

totally backward,” says Heidi Zak, cofounder of ThirdLove, an e-commerce company with an app to help women find a better-fitting bra. “Instead, think, I might want to raise money in a year or two. I need to build my network first.” App developers suggest going to tech conferences (Apple typically holds its World Wide Developers Conference in June in San Francisco), attending coding classes, and finding friends or friends of friends who work in tech. One simple networking trick Zak used: “Say ‘yes.’ The first year when we started, I said ‘no’ to everything. All we did was focus on the product. Now I say ‘yes’ to speaking opportunities, conferences, classes—you always meet interesting people, and you never know who they know and where those conversations will take you.” Be bold about asking questions even if it feels awkward at first—people usually like to talk about how they have built their business. “Two or three years ago, I wasn’t as comfortable just walking up to people,” Zak says. “You get used to it.”

Practice Your Pitch

When it comes to raising money, you’ll probably be pitching your idea to an individual “angel” investor, an early-stage venture capital fund, or what’s called a seed accelerator—a competitive program that offers mentoring and education and culminates in a demo to investors. Be sure to make clear why your product will be important to people. “I always encourage people to begin by stating the problem they are trying to

solve,” says Marne Levine, chief operating officer at Instagram. “You need to get people on board with the *why* before you sell them on the *what*. Too many people skip straight to their idea and fail to bring their audience along.” If your app is aimed at women, you may need to explain to male investors why it’ll be popular. “It is typically guys who hold the money,” says Exton, who created the dating app. “For a lot of guys it was like, ‘There are really that many lesbians?’ Yep, there are.”

Move...or Stay Put

Of course there can be benefits to living in a tech center like San Francisco, Seattle, Boston, or New York. “In Silicon Valley, there is camaraderie and other founders sharing information in all kinds of ways—female founders too,” says Zak. But that doesn’t mean you’re required to rent a house in Palo Alto and live with all your coworkers. “It’s okay if you have this great idea with your buddy and you’re in the middle of nowhere,” says Pruden. “You don’t even have to be together.” She once met a group of founders at an airport luggage carousel who were high-fiving—it turned out they had all worked together creating a company online but had never met until that moment. “For the majority of people, I don’t think it matters where you are these days. You can FaceTime and Slack and all that good stuff,” she says.

Be a (Utility) Player

Launching your own product means you’ll need to be willing to pitch in on whatever needs doing. That skill and flexibility can serve you well if you eventually take a role at a larger company, says Levine. “At Instagram, the way we think about hiring is less about finding highly specialized individuals” and more about finding



“[TECH] IS NOT REALLY A CAREER ANYMORE—IT’S AN ASPECT OF ANYTHING YOU WANT TO DO.”

—SHAAN PRUDEN, SENIOR DIRECTOR, PARTNERSHIP MANAGEMENT AT APPLE

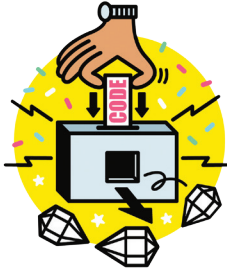
people who are “ready to meet the needs of the business as they evolve.” Being a founder requires chipping in all over the place, says Bashir, whether that means coming up with a marketing plan or cleaning up a messy office when you know someone’s coming in for a meeting. “Anything that needs to be done, you’ll probably do a decent job at it,” she says. “The need for persistence is incredibly high because nothing really works in the early days and you’re constantly pushing yourself ahead.”

Prepare to Face-Plant

It’s kind of expected. There’s even been a FailCon with events

worldwide where start-up founders studied their own and others’ flops. “What I love about the app community is that people aren’t afraid to fail and it’s not seen as a failure,” says Pruden. “Part of the secret of success of the Valley is that people don’t go home in shame because they tried something and it didn’t work out. Maybe [your idea] was ahead of its time. The planets didn’t align. You learned a ton. Maybe you found your best cofounders ever and then a bunch of you are going to come up with another idea,” she says. “Failure isn’t a bad thing—it’s part of the whole process of what’s going to be a success next time.” ■

Coding



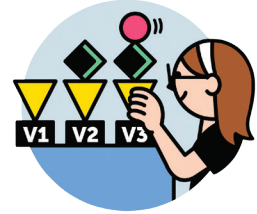
Let's start at the start. Coding (aka programming) is how you tell your computer what to do. The result is software—like an app or a site. Companies such as Codecademy and Code School help you practice. Then you can put work online or, if it's an app, submit it to Apple or Google for a green light.

Language



You'd use Spanish to find your way around Barcelona, right? Well, programming languages also have a specific purpose. You'd use Swift to write code for iOS (like the iPhone) and JavaScript, Python, or Ruby to build websites or web apps.

Versioning



This is exactly like that time you wrote a huge midterm paper and (we sincerely hope) hit "command S" every few minutes. In the coding world, versioning keeps track of each change—helpful when you need to go back to see where you screwed up. Many coders save these changes through a system called Git and the website GitHub.

Front End/ Back End



When you check Insta, you see the front-end styling. The back end makes sure, for example, that you can log in by checking your password against a database. Basically, the front end is Gigi Hadid's glam squad, and the back end is the assistant who booked the studio. Both talents are in demand.

HOW TO TALK TECH

If you're new to the field, the jargon can be, well, technical. We break it down so you can keep calm and code on.

BY DANIELLE KAM

Framework



Framework is to coding as acronyms are to texting—they create shortcuts so you don't have to write thousands of lines of code in order to do something. You can write your own framework, but most developers will use existing frameworks like Angular or Ember in their projects. (Not to be confused with a wireframe, which is a rough sketch of a website.)

Open Source



If you've used Google Docs, you know how open-source code works. Using GitHub, many people can contribute to a project, accepting or rejecting changes from others. You'll learn, join a community, and show off your skills to potential employers.

Big Data



A buzzword for the one-metric-crap-ton of data piling up in the information age. It includes every nugget imaginable (yes, including factoids companies collect about you). The challenge for developers is turning this mass and variety of data into something usable.

The Cloud



It sounds so poetic, but the cloud is like a series of storage units, filled with data instead of skiing equipment. Rather than hanging out on your computer, files in the cloud go to a "server farm"—a building with lotsa servers in it. Some companies have their own farms, and others share space.

ILLUSTRATIONS: RAMI NIEMI

SOURCES: ZACH SIMS, COFOUNDER AND CEO OF CODECADEMY; ALYSSA NICOLL, CONTENT DEVELOPER AT CODE SCHOOL