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Special Report: The Tragic Tale of Tide Pods P.104



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GRAND DESIGNS

THE NOTION OF “DESIGN THINKING”—which takes some of the tools involved in shaping physical products and applies them to the task of building better systems and organizations—has been around for decades. But Tim Brown has been on a mission to broaden its reach and understanding. The CEO of design firm IDEO, and author (with colleague Barry Katz) of the 2009 bestseller *Change by Design*, isn’t merely hoping to expand its canvas—using this collaborative approach to solve societal as well as business problems—but also to rework the very grammar of design.

In a wonderful new essay, adapted from his updated book of the same title, which hits shelves this month and is excerpted in this issue (please see page 92), Brown explains that designers are learning to think not about nouns, but of verbs. “When we focus on nouns, we lock ourselves into an incremental mindset: a better toothbrush, a more comfortable desk chair, a quieter air conditioner,” he writes. But when we think about verbs—improve oral hygiene, work comfortably, live in harmony with your environment—“we blow the roof off the problem and are able to approach it in all of its wicked complexity.”

This simple frame shift in syntax is more powerful than it might seem—a thesis that Brown will explore in depth at our Brainstorm Design conference in Singapore, March 5–7. Importantly, it also reflects one question at the heart of “The Real Tide Pod Challenge,” a thoughtful and finely reported investigation by *Fortune*’s Jake Meth, which begins on page 104. Tide Pods, the colorful, squishy packets of detergent that have become a runaway hit over the past seven years, are one of Procter & Gamble’s biggest successes. Laundry pods are now a \$1.5-billion-a-year business, and the Cincinnati company has a 79% market share. At the same time, the pods have prompted an average of 11,568 calls to poison-control centers—and more than 4,000 emergency room visits—a year since 2013. That disconnect, as Jake explains, may speak directly to how P&G set out to design the product—and to what it has and has not done to fix it in the wake of these accidental poisonings.

The question that remains: Is P&G focused on the noun or the verb—on the blockbuster



Do laundry pods have a fundamental design flaw? It seems that children keep accidentally eating them.

product, or on reducing risks to consumers?

And that question brings up a separate philosophical—or perhaps, ethical—conundrum: How much should manufacturers and marketers do to make sure their customers are using their products the right way? At what point does the company’s responsibility end... and the customer’s begin? It’s a dense and sprawling debate these days, stretching across the corporate landscape.

A more settled debate, however, concerns how much companies should do to keep their workforces thriving and engaged. The answer? A lot. That’s certainly the takeaway from our annual “100 Best Companies to Work For” list, compiled with our partner Great Place to Work (please see page 57). In the end, CEOs and corporate boards may balk at some of the more generous perks companies are giving their employees: Nvidia, No. 38 on our 2019 list, will help pay off their workers’ student loans up to \$6,000 a year; Bank of America (No. 92), offers child-care reimbursements of up to \$240 a month. But the design thinking here is that these companies are building cultures, not merely a slate of benefits.

These companies are in the verb business, after all. It’s a great strategy, by design.

CLIFTON LEAF
Editor-in-Chief, *Fortune*
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*Source: 2018 Mastio & Co. National LTL Carrier Report

THE
WORLD IN
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PAGES

BRIEFING



Taming the Behemoths

D.C.'s bitter partisans can agree on at least one thing: The big tech companies need reining in.

By Adam Lashinsky

POLICY

WILLIAM BARR, in his January confirmation hearings to become the U.S. attorney general, entered into the lexicon a valuable, if redundant, expression to describe the biggest technology companies in the land. "I think a lot of people wonder how such huge behemoths that now exist in Silicon Valley have taken shape under the nose of the antitrust enforcers," said Barr, an establishment Republican lawyer from central casting—and therefore an unlikely antagonist for Big ▷▷

Business. His locution stuck, heightening the sense that the “behe-moths”—Facebook, Google, Amazon, Microsoft, Apple, and a handful of less-gigantic competitors—now face a greater regulatory threat than at any other time in their relatively brief existence.

The companies are fighting the onslaught in various ways. Microsoft, the industry’s journey-man of governmental warfare, is cleverly advocating regulation of a narrow slice of potentially creepy technology: facial recognition. Apple is pointing fingers, suggesting its data-privacy stance is holier than Facebook’s and Google’s. Facebook, in a preview of how the industry will battle its adversaries, has simultaneously called for some form of regulation while darkly warning of the unintended consequences of the wrong kind. (One argument certain to get Donald Trump’s attention: Regulate us too severely, and you’ll only empower our Chinese competitors.)

The situation is fluid, but it’s clear that legislators, regulators, and consumer advocates are fed up with big tech companies and that some form of stricter control almost certainly is coming. What’s more, in the U.S., regulating Big Tech might be the one subject that bridges the ever-widening



political divide. Says a top policy executive for a major tech player: “This is where the libertarian right meets the populist left.”

At the highest level, the industry faces the once unthinkable notion that it needs an overarching regulator. In the U.K., the opposition Labour Party has proposed creating a single digital regulator. The idea is gaining traction in the U.S. too. “This is like mortgages: In the right hands, they’re a tremendous benefit,” says Fiona Scott Morton, an economics professor at Yale. “But I can sell an exploding mortgage to a lower-income person and ruin their financial life. Most people would say they like mortgage regulation.”

The area most likely to see fast action is

privacy. Last year the European Union began implementing its General Data Protection Regulation, a broad measure that gives individuals rights over their data. California then added a hastily crafted Consumer Privacy Act, due to take effect in 2020. The business community so thoroughly dislikes the California law that there’s broad agreement on passing federal legislation in Washington to preempt that and other potential local directives, possibly this year. “This is one area where it doesn’t make sense to have a patchwork of laws,” says Michael Beckerman, CEO of the Internet Association, a 45-member trade group that counts all the major non-hardware digital players as members.

“It’s almost like having different electricity standards between states.”

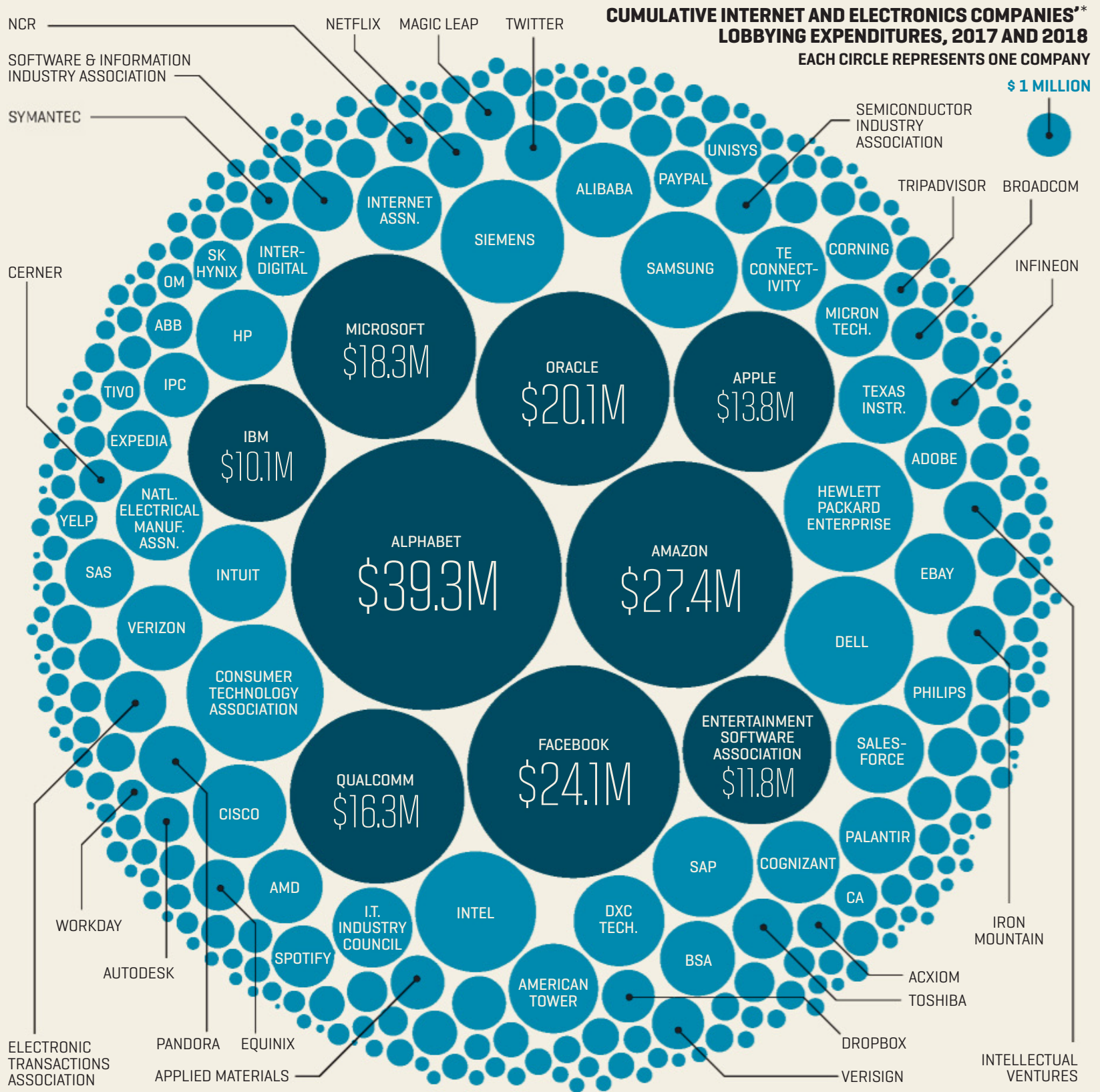
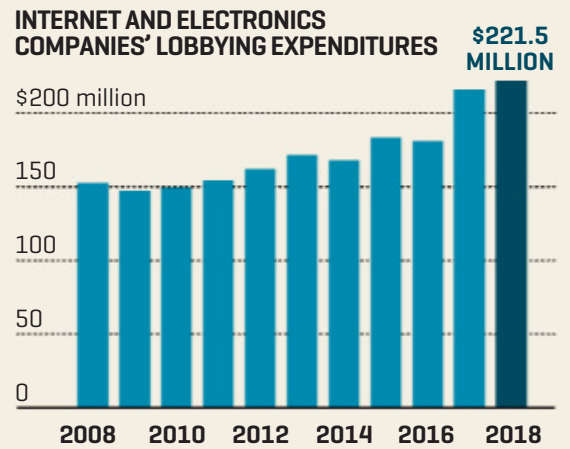
If privacy legislation is most likely to happen soon, a bevy of more complicated issues will be addressed more slowly. A rethinking of decades of antitrust law could have the most impact on the biggest tech players, particularly Amazon, Facebook, and Google. Breaking up these giants would require a new approach, widely known as “hipster antitrust” theory, which focuses on the harm the companies cause to competitors rather than on higher consumer prices, as traditional antitrust law does. (After all, big tech players usually lower prices for consumers—or charge them nothing at all.) “We’ve got to stop using the word ‘monopoly’ and start using the word ‘anticompetitive,’” says Roger McNamee, a longtime Silicon Valley investor who has become an adversary of big tech, particularly Facebook.

The behemoths won’t go down without a fight, of course. Their massive balance sheets can fund endless lobbying, the public tends to love their (often free) products, and the fractious political climate works to their advantage. Yet there’s an air of inevitability about regulation. It is becoming a question of when, not if.

ANALYTICS Seeing Trends in the Data

TECH MAKES IT RAIN ON K STREET

Fear of having their business activities curtailed by politicians and regulators has tech companies writing ever bigger checks for lobbyists. To put the eye-watering amounts in some context, the five biggest tech spenders lay out more on lobbying than the entire oil and gas industry. A considerable uptick post-2016 suggests some anxiety about tech's role in influencing the presidential election.



* INCLUDES COMPANIES IN SOFTWARE, CHIPMAKING, CONSULTING, AND OTHER TECH INDUSTRIES. SOURCE: CENTER FOR RESPONSIVE POLITICS



Cloud Migration

3 Trends Shaping the IT World

THE PAST DECADE SAW INFORMATION technology leaders rushing to jump on the cloud bandwagon. Cloud, according to pundits, helps level the playing field and gives organizations of all sizes the ability to grow and innovate at a pace never previously seen. As a result, the growth of cloud adoption, services, and usage continues its upward march. Research firm Gartner Inc. says cloud computing will hit the \$300 billion mark by 2020 and cloud growth is expected to grow by 18% this year alone. As the market matures, there are some key differences in how IT organizations plan for and execute cloud migration. Here are three trends that will change the way cloud business is done.

The death of cloud-or-bust. Over the past decade, there's been swift and exponential growth of cloud services. That's finally changing, says Craig Lowery, senior director and analyst at Gartner. He notes that IT departments are recognizing that some applications are simply not made to run in the cloud. "What we've seen happening is that more and

Gartner Inc. says cloud growth is expected to grow by 18% this year alone.

more people understand that the real value of the cloud is not just moving their existing workloads to the cloud and leaving them the way they have always been," he says. "People are now saying, 'I really need to think about how I'm going to transform and modernize my workloads before I move them.'"

IT asks for help. Prior to 2018, many organizations assumed that cloud migration was something that could be handled internally. The reality is that cloud migration is a complicated process, requiring a complex assessment of people, processes, data, and applications. When IT saw they were in over their heads, many CIOs turned to managed service providers, migration tools, and management platforms to help—a trend that will continue this year. Gartner says almost 16% of cloud budgets are spent on cloud-related services, and it will increase to 25% by the end of next year. Traditional IT departments are also realizing that they need to work with their own teams so they can move applications more efficiently, and leave behind those that should stay on premises.

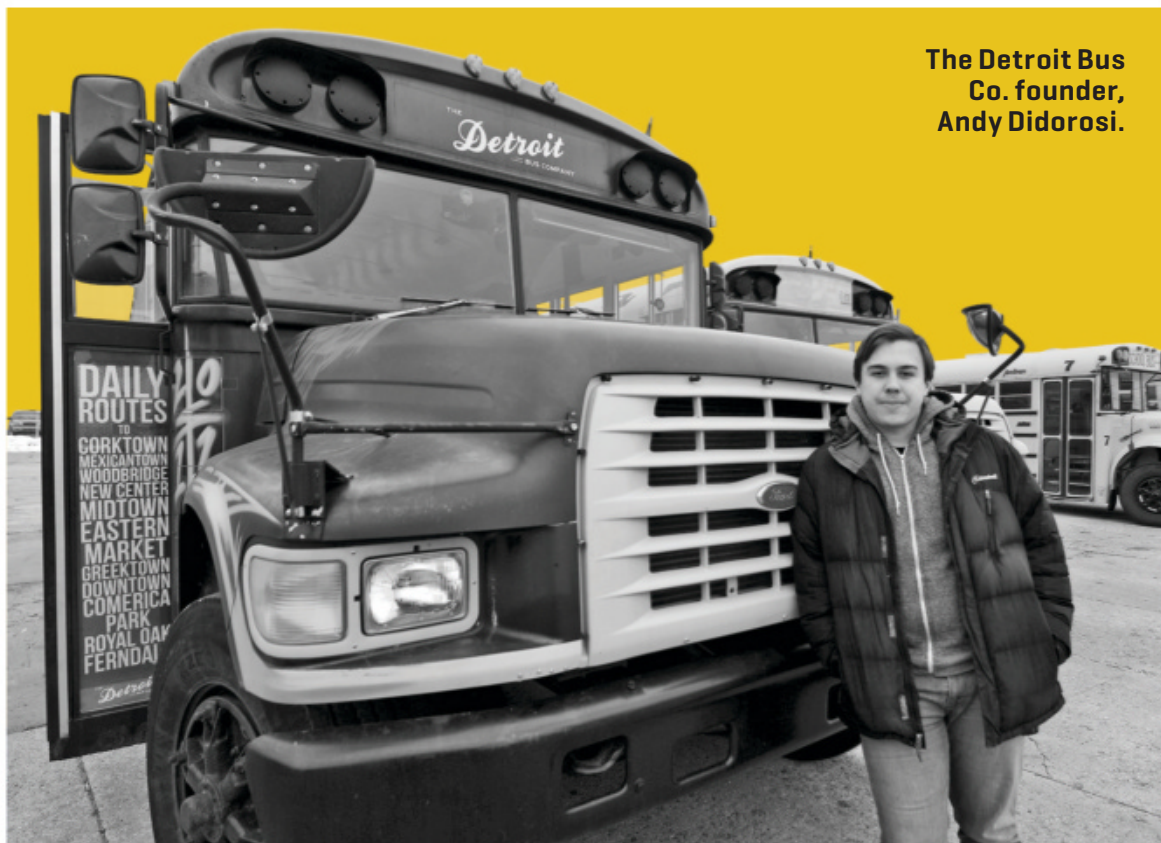
The transformation of the IT employee. When cloud migration took off, IT started feeling the pressure almost immediately. Cloud management requires a different skill set than most IT staff has, which led to a shortage of, and demand for, skilled cloud computing experts. In the beginning, organizations turned to consultants and outside firms. However, since the value of cloud lies in the way it can transform and change at a moment's notice, IT departments will be forced to train employees to do more than just manage physical hardware, says Lowery. "One of the biggest questions I get is 'What's the impact on our IT organization? How are roles going to change?' It's a problem. You're going to have to train some people or hire more people. IT is going to have to up-level their skills." Be prepared, though, he says. If you're going to pay to train someone, you're also going to have to pay to keep them. ●



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The Detroit Bus Co. founder, Andy Didorosi.

A Pub Crawl for Public Transport

The Detroit Bus Co. could be a model for fixing the gaps in our cities' crumbling transit systems. **By Tamara Warren**

MASS TRANSIT

DETROIT IS THE ARCHETYPE for urban sprawl, spanning over 140 square miles of downtown, industrial sites, and suburbs. And though it's a metropolis built on the back of the personal automobile, nearly 85,000 of its residents depend on its notoriously unreliable municipal bus system to get around.

Inadequate public transit, common in many Rust Belt cities, is an impediment to growth—87% of trips taken drive some form of economic activity—and maintains inequalities in the labor market. Andy Didorosi, a Motown native, founded the Detroit Bus Co. in 2011 to offer a private alternative.

Didorosi bought a bus from Craigslist, commissioned a local artist to spruce up the exterior, and began to provide unlimited daily rides for \$5. The company now offers private charters and tours—like a \$40 historic bar crawl called “Drunks of Antiquity”—on its 15 buses. The private bookings fund Didorosi’s mission to deliver free rides to Detroiters who need to get around. Each free ride

costs the company \$5.72, which is offset by the tour profits. (The company also accepts donations for the “Ride for Ride” program, which provides thousands of rides to school-children.)

The Detroit Bus Co. is now working on Hyper, a transit operating system that will help others build private bus companies across the country. The Hyper software creates ad hoc routes and walks operators through the process of being a bus supplier.

“If you go to Craigslist and buy a bus for two grand, you’re in the game and creating impact right then,” says Didorosi. “I think that’s the Detroit way of doing things.”

COST OF THE SHUTDOWN

\$11B

LOST ECONOMIC ACTIVITY

The 35-day shutdown came at an astonishing cost. Per CBO estimates, \$3 billion of the lost economic activity will be permanent.

-0.2%

GDP

The expected effect on GDP for the first three months of the year.

3

WENT PUBLIC

Owing to furloughs at the SEC, only three companies held their IPOs in the first four weeks of 2019, down from 15 over the same span of 2018.

300

YEARS TO RECOVER

The former superintendent of Joshua Tree National Park said the shutdown caused centuries worth of damage from trail erosion and vandalism.

—LUCINDA SHEN

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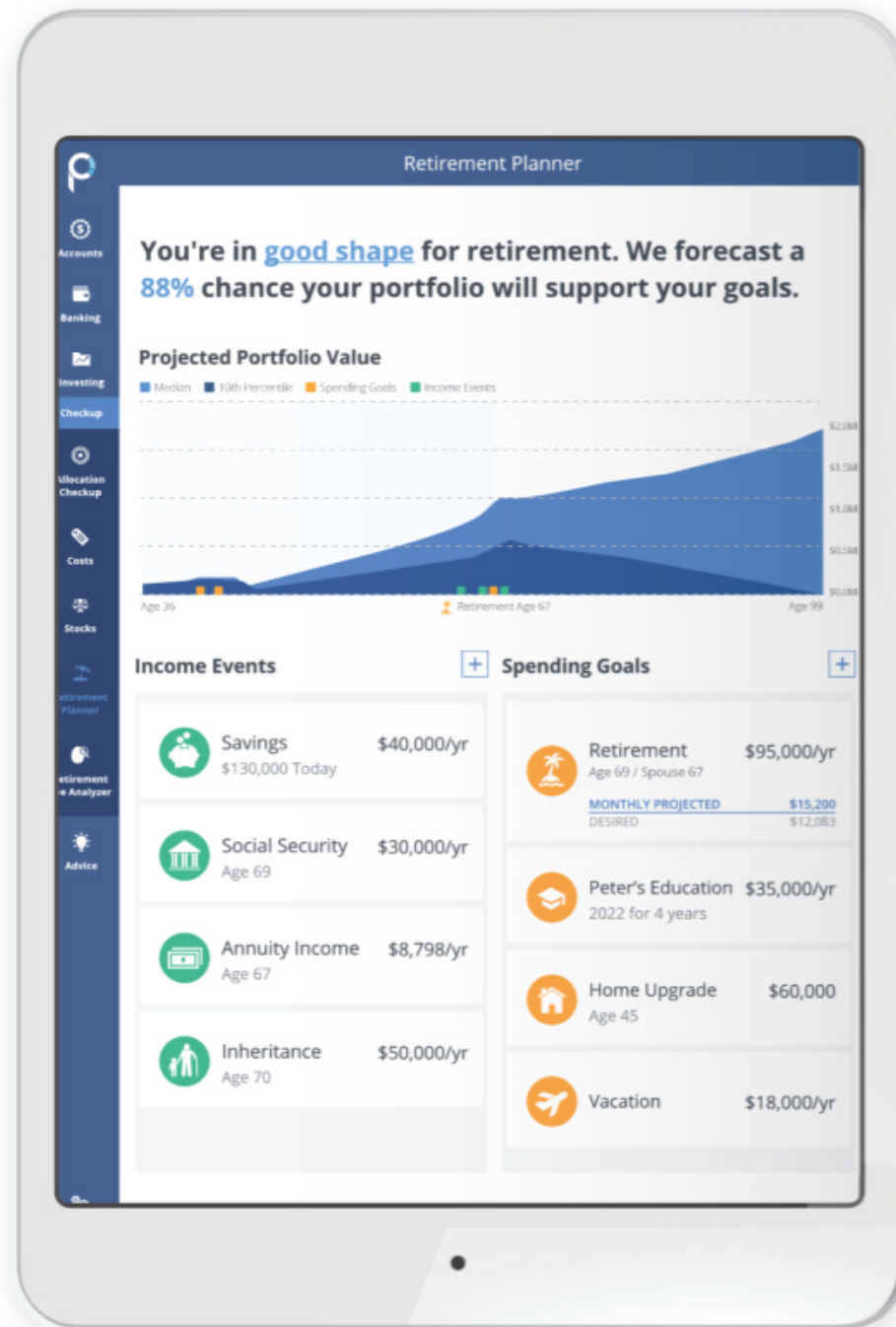
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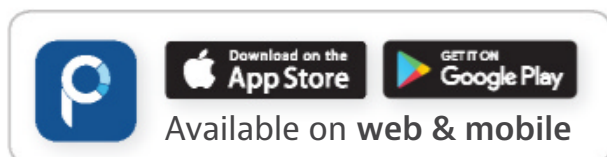
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6 COSTLY MISTAKES TO AVOID IN A VOLATILE MARKET

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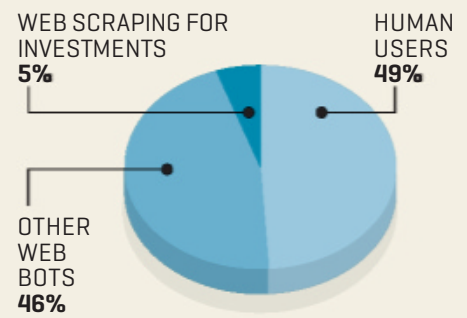
BOT OR NOT?

SHARING THE HIGHWAY WITH INVESTOR BOTS

TESLA announced 3,000 layoffs earlier this year—but web-scraping bots knew the news before it went public after discovering 60 searches for layoff laws traced back to the electric-car maker’s address. Increasingly, professional investors are looking

for an edge by analyzing terabytes of information from the open web. Financial consultancy Opimas estimates these bots—trawling the Internet for hints of a company’s health—now account for 5% of all web traffic. —LUCINDA SHEN

BREAKDOWN OF TOTAL WEB TRAFFIC, 2018



SOURCE: OPIMAS ANALYSIS

FILM

AMAZON'S SUNDANCE SPREE

AS IS TRADITION, Hollywood studios opened their wallets at the Sundance Film Festival, scouting potential crowd pleasers and critical darlings. But the streaming services were the ones to really splash the cash this year, including a record \$47 million spent on five films by Amazon Studios. That’s the most ever spent by a studio during a single year of the festival, which was founded in 1971. Among Amazon’s acquisitions: \$13 million for the Mindy Kaling–starring comedy *Late Night*; \$14 million for *The Report*, a political drama starring Adam Driver; and another \$14 million for the feel-good dramedy *Brittany Runs a Marathon*. It’s a sign of intent from newly appointed Amazon Studios chief Jen Salke, who took charge last year. —ARIC JENKINS



Hajimemashite!*

Japan, a nation steeped in customs and etiquette, readies itself for a foreign wave.

By Sheila Marikar

TOURISM

THE JAPANESE TRADITION of bathing in *onsens*, or natural hot springs, dates back to the sixth century, but not everyone’s able to jump right in. After interviewing dozens of international tourists, Hoshino Resorts, one of Japan’s leading hospitality companies, discovered a general wariness around the steaming-hot public pools that occupants are expected to enter naked. In response, it released a lighthearted YouTube video about *onsen* etiquette. It features a cartoon rabbit and frog undressing—“Don’t be shy!” commands the English-speaking narrator, before instructing bathers to ditch their cell phones.

The *onsen* video is part of a larger effort to make Japan more approachable to foreign guests ahead of Tokyo’s 2020 Summer Olympics. In anticipation of the 40 million foreign visitors expected during the Games, Japan is outfitting its fleet of bullet

trains with Wi-Fi and launching a 24/7 multilingual support center; bilingual road signs are being rolled out across the country as well.

Japan, a nation that has barely eked out a single year of 2% GDP growth in the past three decades, sees Western tourism as an untapped gold mine. It currently attracts just 13 million foreign visitors per year, about the same as New York City, and only 11% of those come from Europe, North America, and Australia.

MY MOVIE SOLD FOR HOW MUCH?



JAPAN: COURTESY OF HOSHINO RESORTS; KALING: GEORGE PIMENTEL—GETTY IMAGES

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A Game of Thrones in the Boardroom

A new book explores what managers can learn from the Machiavellian fantasy series. By Rachel King

STRATEGY

IT IS SAID in George R.R. Martin's fantasy saga *A Song of Ice and Fire* that when you play the Game of Thrones, you win or die—there is no middle ground. In real life, mercifully, the stakes aren't so brutally high.

Yet as Columbia Business School professor Bruce Craven describes in *Win or Die: Leadership Secrets From Game of Thrones* (Thomas Dunne Books), there are real-world lessons to be gleaned from the political machinations of

fictional Westeros. Fans of the multi-book series or HBO's adaptation will enjoy Craven's analyses of characters' personal development and motivations in strategy. Much like Martin's treatment, Craven

doesn't put the heroes on pedestals—starting with the blunt advice: “Don't be Ned Stark,” who placed so much weight on his own values, believing them to be objective, that it cost him his head. “Leaders have an obligation to understand the challenges and opportunities presented by [their] values,” Craven writes.

Would-be senior managers looking to hone their people skills might glean more as Craven breaks down step-by-step exercises in self-advocacy, social awareness, and relationship management. And, despite what Cersei Lannister says, there is still a middle ground—at least, according to Craven, when you lead with adaptability and support colleagues with confidence.

SENTIMENT

FORTUNE READERS: WANING CONFIDENCE IN ECONOMY

“I HAVE TO ADMIT TO BEING SHOCKED by some of our results this year.” This is how Mark S. DiSalvo, president and CEO of business consulting firm Semaphore, described the results of this year's survey of readers of *Fortune's* Term Sheet newsletter. These are the investors whose confidence drives the startup economy—and they aren't very confident. In January, 604 readers took a survey conducted by Semaphore about their outlook for 2019. [Approximately 30% work in private equity; 21% work in venture capital; the rest include investment bankers, limited partners, operating executives, and third-party vendors.] Here, some highlights. —POLINA MARINOVA

41%

Of respondents had little to no confidence in the U.S. national economy. [Only 8% expressed little to no confidence last year.]

53%

Had little to no confidence in the international economy. [Only 4% expressed little to no confidence last year.]

75%

Expect to earn more this year than they did in 2018, with 11% expecting to earn less and 14% the same amount.

A CULTURE THAT SETS US APART

Nationwiders take pride in having a culture that's dedicated to making a difference in the lives of our members, communities and each other every day. Thanks to our associates, we've made the Fortune 100 Best Companies to Work For list for the fifth year in a row.





Markets Are Global, Payments Are Local

Even as retailers grow multinational in scope, the way people pay for things differs radically from country to country. By Jeff John Roberts

CUSTOMS

IF YOU STROLL the downtown of the world's major cities, you'll see many of the same stores. Yet even as retailers become more global, the way people pay for things still varies dramatically from country to country. According to Kamran Zaki, an executive at payment provider Adyen, this is partly owing to regulation and legacy systems but is also tied to culture: In short, we like to use the payment method we grew up with, even if a newer technology is available. But online payments are just as varied. Here are three ways that online consumers around the world pay for goods.

BRAZIL

In South America's biggest market, millions of people make online purchases with Boleto, an off-line installment method. This involves printing a bar code and trotting down to a local store or lottery stand to make a cash payment. The bar code is scanned, and once the item is paid

off, the merchant ships it or lets the customers pick it up in a store. Adyen says Boleto accounts for up to 80% of online payments. It's popular in part because 35% of Brazilians lack a bank account.

THE NETHERLANDS

Many Northern Europeans shun credit cards. This is partly the result of

a cultural aversion to debt but also because regulations make it impractical for credit card issuers to offer the lavish spending rewards found in North America. So debit cards are especially popular. In the Netherlands, the majority of online transactions are carried out with a system called iDEAL that directs shoppers away from a merchant's page to an online banking site. After entering an ID and a password, shoppers return to the merchant to complete the transaction.

CHINA

When Chinese consumers want to buy something, it's very likely the transaction will involve their mobile phone. Digital wallet services like Alipay and WeChat/Tenpay dominate the spending landscape, so much so that luxury retailers in the U.S. and Europe make a point of ensuring the payment platforms are available for Chinese tourists.

SHOPPING

FEWER SHOPS? MALLS AREN'T SWEATING IT

THE NATION'S shopping malls are discovering a counterintuitive solution to the diminishing number of retail tenants: offer less shopping.

According to CoStar Group, a commercial real estate data provider, the percentage of newly leased anchor tenant space taken by general retail and apparel stores fell to 49.7% last year, from 63.7% in 2011.

Gone or going are hundreds of Sears, J.C. Penney, and Macy's stores, replaced by the likes of Gold's Gym, movie theaters, bowling lanes, and other places for experiences that can't be bought online.

Helping, too, are a crop of e-commerce players like Untuckit, Warby Parker, and Casper that are discovering the virtues of a physical space.

Simon Property Group, the largest mall operator in the U.S., is adjusting well enough. Its malls were 95.9% full as of Dec. 31. —PHIL WAHBA



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A Deep Well of Company Loyalty

A focus on employee development and giving back to the community has kept **Wegmans** thriving for more than a century.

WEGMANS PRIDES ITSELF ON BEING A family affair, and a long-running one at that. John Wegman opened the first Rochester Fruit & Vegetable Company in upstate New York in 1916, and his brother, Walter, joined the following year. Today, the third and fourth generations of Wegmans run the privately held Wegmans Food Markets, which operates 98 supermarkets in six states and employs nearly 50,000 people.

This longevity can be attributed to a shared set of core values that has lasted more than a century and that holds the family—and the company—together. “Caring, high standards, making a difference, respect, and empowerment are foundational to everything we do,” says Jack DePeters, senior vice president of store operations.

Wegmans fortifies that belief by investing heavily in its workforce. A standout is its scholarship program. Since the program’s establishment in 1984, the company has awarded \$115 million in tuition assistance to more than 36,500 part-time and full-time employees, many of whom have built lifelong careers at Wegmans.

Opportunities for growth inside the company have advanced careers as well. For example, a part-time cashier interested in learning about the bakery operations can split time between both departments. “Last year, about 25% of our employees participated in

a lateral-learning assignment or received a promotion,” explains DePeters, who started as a part-time worker in 1966.

And while Wegmans employees span five generations, representing nearly every demographic, no matter what their background or age, all workers have an equal voice in the company’s continuous improvement. “They are closest to the work and to our customers,” DePeters says, “so we rely on their input when developing new initiatives.” Employees offer ideas and suggestions in focus groups, on Open Door Days, and in daily Huddles. They can also communicate directly with DePeters through the Ask Jack program.

As much as Wegmans takes care of its employees, it also looks after the communities in which they work. That’s why paying it forward is

so important, DePeters says. To that end, Wegmans donates nearly 13.5 million pounds of food annually and has raised more than \$38.8 million for hunger relief since 1993. “I am extremely proud of how much our employees care about each other and our customers,” he says. “They are truly the ones who bring Wegmans’ core values to life.” ■



“Caring, high standards, making a difference, respect, and empowerment are foundational to everything we do.”

JACK DEPETERS
Senior Vice President,
Store Operations,
Wegmans



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Make a Difference
Respect
Empower



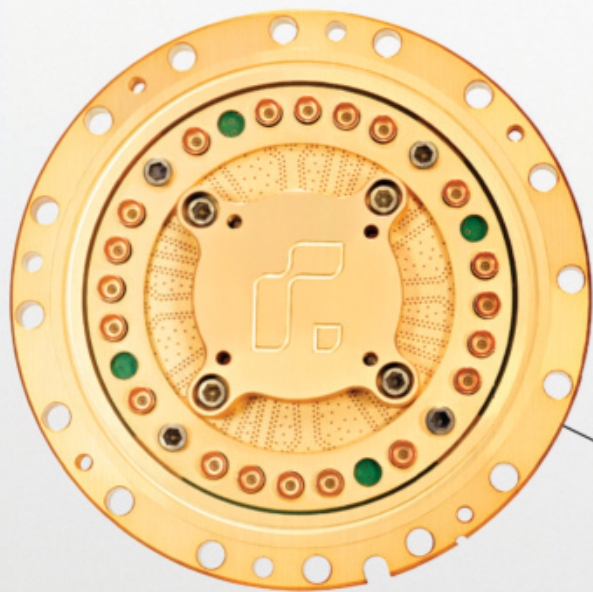
We are a mission-driven family company committed to a set of values shared by everyone at Wegmans. Our common goal is to help people live healthier, better lives through food. A diverse family, spanning all generations and backgrounds, our people share their unique talents, thoughts, and ideas to help Wegmans deliver on our commitment: Every Day You Get Our Best! We are so grateful for the caring, incredible service they provide our customers — together, they give us 50,000 reasons to celebrate every day.

Danny, Colleen, and Nicole Wegman

FOCUS

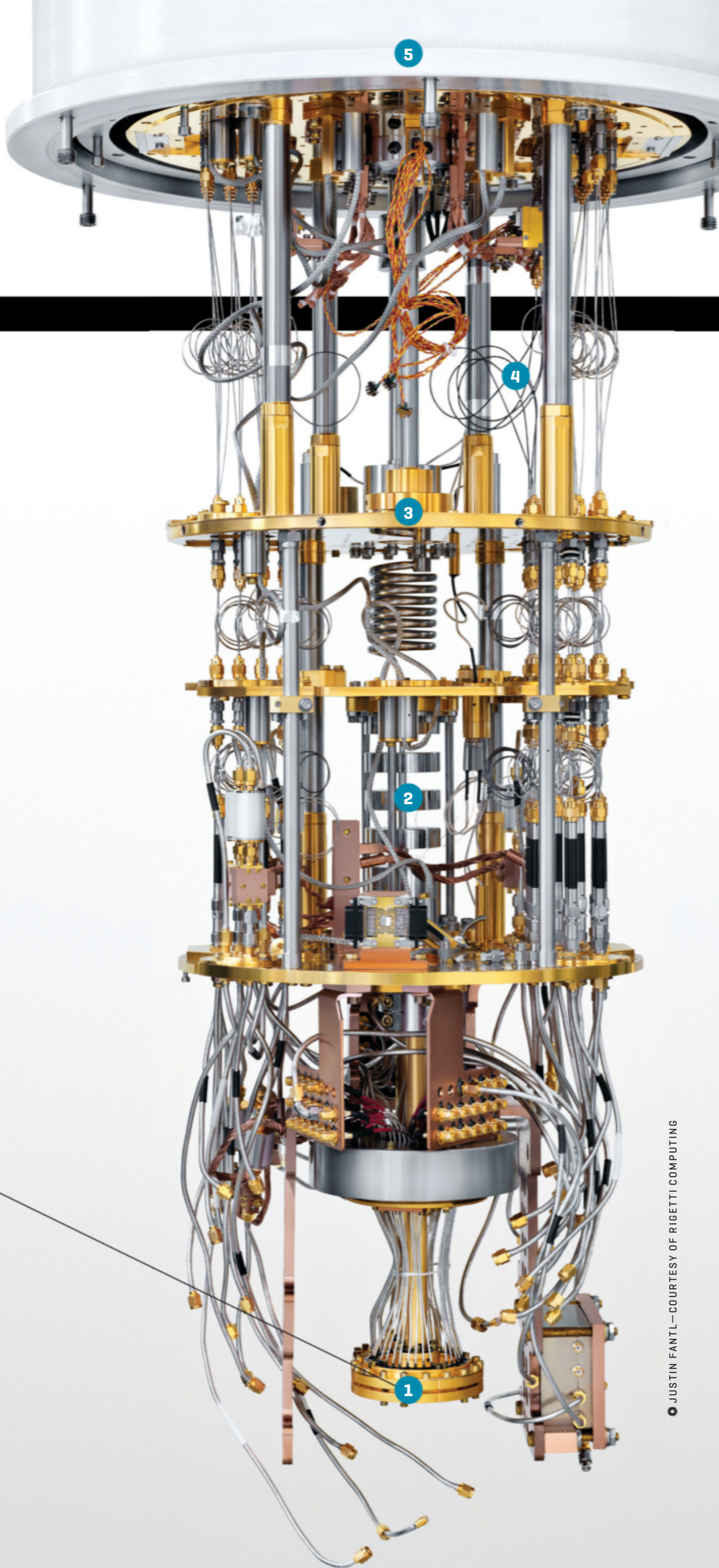
CALCULATING QUANTUM COMPUTING'S FUTURE

Companies—and countries—are battling for leadership in this nascent technology that promises faster data crunching than ever before. **By Robert Hackett**



1. THE BRAIN

● YOU'VE HEARD OF A CPU; now meet the QPU, or quantum processing unit. This computer, from startup Rigetti, features a gold-plated copper disk with a silicon chip inside that contains the machine's brain. Most everything else in the computer is designed to keep the chip cold and stable.



2. THE HEART

- BENEATH THESE TUNA CAN-like heat exchangers sits the “mixing chamber.” Inside, different forms of liquid helium—helium-3 and helium-4—slosh together. Through separation and evaporation, the helium diffuses the heat.

3. THE SKELETON

- THESE GOLD PLATES ARE the layers of the quantum computer wedding cake. They separate cooling zones. At this layer, the temperatures dip to just above absolute zero. At the bottom, they plunge to one-hundredth of a Kelvin—hundreds of times as cold as outer space.

4. THE NERVES

- THE COILS IN THESE PHOTON-carrying coaxial cables are more than just a decorative flourish. They relieve the stresses that result from supercooling the interior. Without the coils, the cables would snap.

5. THE SHELL

- WHEN THE COMPUTER IS operational, five casings [like the white one shown at the top of the image] envelop the machine. These Russian-nesting-doll cans act as thermal shields, keeping everything supercold and vacuum-sealed inside.

IN 1982, NOBEL PRIZE-WINNING physicist Richard Feynman conceived of an ultrapowerful calculator that relies on microscopic particles to operate. He called his idea a “quantum” computer, referring to the laws that govern nature at a subatomic level.

Today, some of the technology industry’s biggest companies, such as IBM, Google, Intel, Microsoft, and China’s Alibaba, have latched onto the idea. They, along with upstarts like California-based Rigetti, are in a race to build these cutting-edge machines, which promise to revolutionize industries including energy, health, and finance by letting them crunch data faster than ever before.

JPMorgan Chase and Daimler have already started testing the technology, hoping that it will eventually give them a leg up over rivals.

Governments understand the geopolitical implications too. China is building a \$10 billion national lab for quantum computing, raising concerns in the West about potentially falling behind.

Just before the recent U.S. government shutdown, Republicans and Democrats set aside their differences to earmark more than \$1 billion “to create a unified national quantum strategy.” Nothing stokes cooperation quite like fear.

“This feels like my generation’s space race,” says Jim Clarke, Intel’s director of quantum hardware.

The most popular approach to quantum computing uses superconducting electronic circuits, piggy-backing on the foundations of the

semiconductor industry. Whereas ordinary computers encode information as silicon-inscribed bits, either “zeros” or “ones,” quantum computers use quantum bits, or “qubits” (pronounced cue-bits). These particles, weirdly, inhabit multiple states at once. To keep them in flux, they must be kept isolated and cold. Very, very cold.

“What you’re looking at is the world’s most expensive refrigerator,” says Bob Sutor, head of quantum strategy at IBM, while gesturing at a 20-qubit quantum computer that company unveiled in January.

Despite its small size, Rigetti, founded by a physicist who previously built quantum computers at IBM, believes it can challenge the titans. The company sells a quantum computing cloud service to researchers who are racing to be the first to achieve “quantum advantage,” when a quantum computer outperforms a traditional one. Scientists expect a modest demonstration of superiority in the next couple of years, though they predict it will take up to 10 years before the technology can handle any meaningful tasks.

“People keep asking whether we can build working quantum computers and do it repeatedly at scale,” says Rigetti vice president Betsy Masiello. “Today, in the market, we have definitively answered, yes. We can build them, they work, and we can do it in a repeatable fashion at production level.”

The reality is here; the race is on. ■

HILTON CELEBRATES 100 YEARS

In 1919, Conrad Hilton founded the company whose name would go on to become synonymous with “hotel.” Since then, more than 10 million Hilton Team Members have delivered unmatched hospitality around the world.

“Hilton was founded on the noble premise that travel can make the world a better place—and 100 years into our story, that premise still guides us today,” says Chris Nassetta, Hilton’s president and CEO, who now oversees more than 5,600 properties under 16 brands in 113 countries and territories.

Over the years, Hilton has welcomed more than 3 billion guests through its doors. But the company makes a point of looking after the driving force behind its exceptional service: Hilton’s Team Members.

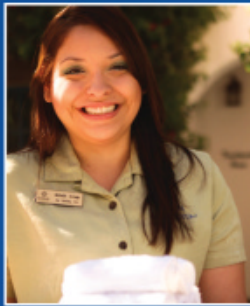
Hilton prides itself on creating a culture of excellence, innovation, and hospitality, and recognizes that the Team Member experience is just as important as the guest experience. The company provides Team Members a high degree of autonomy and opportunities to grow, with many boasting careers that span decades and generations.

“The experiences we’ve created, the service guests expect from us, and the innovation we are known for are all thanks to our team,” says Matt Schuyler, chief human resources officer at Hilton. “The collective dedication of nearly 10 million Team Members who have worked with us over a century has helped us create one of the world’s most inclusive environments.”

“Hospitality is our way of life,” says Nassetta. “It can be as small as a shared cup of coffee or as momentous as being there for the biggest moments in one’s life. However you look at it, our Team Members are having a positive impact—on our guests, our communities, and one another. And that’s what makes this a truly great place to work.”

To learn more about the positive impact Hilton has had on its Team Members, guests, and communities in the U.S. and around the world, check out The Hilton Effect—available at www.fortune.com/thehiltoneffect.

The Hilton logo, featuring the word "Hilton" in a white, serif font, enclosed within a white rectangular border.



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Attorney Jay Edelson has won hundreds of millions of dollars for consumers in privacy cases.

BIG TECH VS. BIG LAWSUITS

Class-action lawyers are champing at the bit amid a rising number of high-profile corporate privacy scandals.

By Jeff John Roberts

TECH **JAY EDELSON GREW UP POOR** among rich kids outside Boston. He seethes at the recollection of other boys smashing \$200 tennis rackets he could not afford, and of his parents scolding him for trying to spend the \$20 he had earned raking leaves.

Today, Edelson, a 46-year-old attorney, still has a chip on his shoulder, but now he directs his anger at other targets—mostly tech companies that play fast and loose with consumer privacy. His Chicago-based firm has filed hundreds of class-action cases against companies like Google, Uber, and Amazon for allegedly misusing the per- ▶▶

▷▷ sonal information of their users.

“Consumers’ data is a commodity—it’s gold; it’s oil. Courts are starting to recognize that companies are misusing it,” says Edelson.

These days, class-action attorneys like Edelson are in a feeding frenzy amid a soaring number of corporate data scandals. Every week, it seems, news articles expose another company’s unsavory data-collection practices, hacking, or careless product design.

In January, for example, Apple admitted that a glitch enabled users of its FaceTime video-chat service to surreptitiously listen to someone they had called but who had not yet answered. Meanwhile, Facebook is grappling with a series of privacy stumbles, including a major breach of user data.

Edelson’s aggressive legal tactics have translated into hundreds of millions of dollars for consumers in cases involving everything from spam texts to spyware. And, yes, he’s made good money for himself too.

Among other things, Edelson’s firm is known for its hands-on approach to technology, which includes a team of engineers who probe apps and gadgets in a search for data leaks. If they find one, they pounce. In one of Edelson’s more colorful triumphs, his firm won \$3.75 million for clients from a Canadian company after discovering its app-controlled sex toy was secretly recording data such as how often the owners used the device.

Currently, Edelson is battling Facebook in a closely watched class-action suit over Facebook’s allegedly scanning faces in photos on its service without user permission. He’s also doing mop-up work on a seminal Supreme Court case his firm litigated involving data brokers, those shadowy companies that collect and resell consumer information.

Edelson says that all the recent corporate privacy missteps have made arguing his cases far easier than it was just a few years ago. “When we go to court, judges look at us differently. They view this as important rather than just confusing,” he says.

But even if judges are more sympathetic, consumers are finding it harder to get a hearing in the first place. That’s because companies increasingly require users who have complaints to argue their cases in private arbitration, in which rules block plaintiffs from banding together to seek a large financial judgment.



Edelson’s firm isn’t just about case law and court hearings. Its Chicago headquarters features an indoor volleyball court, where employees can take a break from litigation.

Edelson, however, shrugs off the arbitration obstacle by saying it just means a shift in tactics. In particular, he points to how his firm has been working more closely with state and municipal governments. In practice, this involves handing off its legwork on potential cases to an attorney general, who can then sue under state laws covering deceptive business practices. In return, Edelson’s firm is paid as a consultant or receives a cut of any settlement.

Not everyone is impressed with Edelson’s creativity. Oriana Senatore, a senior vice president with the Institute for Legal Reform, an affiliate of the pro-business U.S. Chamber of Commerce, suggested that Edelson and his firm are akin to high-tech ambulance chasers.

“We agree they’re early movers in privacy and technology, but they’re just using an old blueprint in a new neighborhood,” she says.

Brian Fitzpatrick, a Vanderbilt University law professor, shares some of Senatore’s concerns. Law firms working with state attorneys general create potential conflicts of interest, he says, including the risk of AGs being influenced by campaign contributions.

The worries may not be unfounded; Edelson’s firm has made a number of \$10,000 donations in Illinois, including to the state’s current attorney general. Edelson responds that his firm backs politicians who “care about the same issues we do.” Fitzpatrick says forced arbitration is the greater harm because it deprives consumers of the right to sue and shields companies from accountability.

Surprisingly, for someone the *New York Times* once called one of the most hated in Silicon Valley, Edelson is mild in person. Sitting in the firm’s office, which includes an indoor volleyball court and a black dog named Lila, he talks of expanding his practice to represent plaintiffs like the victims of California’s wildfires.

Says Edelson: “I always wanted to have impact on the most critical issues of the day.” ■



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THE AUDACITY OF SCHULTZ

Howard Schultz appears to have dramatically misread America's appetite for sending a coffee mogul to the Oval Office. Is the backlash specific to one billionaire exec's hubris—or have we lost our taste for CEO candidates once and for all? **By Beth Kowitt**



POLITICS

FORMER LONGTIME Starbucks CEO

Howard Schultz has nailed countless product rollouts over the years. He is, after all, the man who introduced America to pumpkin spice lattes, made the frappuccino a household name, and persuaded us to order our drink sizes in Italian even when we're in Des Moines.

But when Schultz announced that he was considering running for President as a “centrist independent”—essentially making himself the product he needed to sell—the launch blew up in a fiery ball of Internet fury.

“New Coke had a better rollout than Howard Schultz 2020,” tweeted Brian Fallon, a former Hillary Clinton press secretary. “Why doesn't Howard Schultz just try to go to space like a regular billionaire,” wrote *Washington Post* columnist Alexandra Petri on Twitter.

Given the ex-CEO's credentials, some—including Schultz—were surprised by the extent of the outcry. In addition to building a legitimately successful business, Schultz was one of the early leaders of the CEO activist movement. He was lauded for offering progressive worker benefits. He took on gun control and gay marriage before either was a topic most executives would even touch. He once led a group of CEOs in vowing to end political contributions until Washington got its act together. And in the wake of Trump's travel ban from Muslim-majority countries, he pledged to hire 10,000 refugees.

But there's a big difference between the desire for a CEO to take a run at a political issue and the desire for a CEO to run for political office. Schultz, it seems, conflated the two.

Much of the wrath has come from the left, which fears Schultz will play the spoiler in the 2020 election. Until recently, Schultz, whose camp declined to comment, had been a lifelong Democrat. But he's now made clear that he's moved away from the party over >>

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Former Starbucks CEO Howard Schultz talks about the ill-fated Race Together program at a 2015 shareholders meeting.



▷▷ differences with some of the policies being floated by a flank of the left—including Sen. Elizabeth Warren’s proposed wealth tax, which Schultz called “ridiculous.”

Schultz took big, bold stands as CEO of Starbucks and was rewarded for it. But as a would-be candidate, he’s been light on specifics, focusing instead on rejecting the proposals put forth by others. Schultz told CNN’s Poppy Harlow that he knows a lot about health care, an issue he describes as “deeply in my heart.” But when asked for his plan, he said, “I don’t have a plan today. I’m not yet running for President.” Voters want what George H.W. Bush memorably called “the vision thing”—something Schultz had as a CEO but so far lacks as a possible candidate. “His candidacy is not compelling,” says Larry Sabato, director of the Center for Politics at the University of Virginia. “There’s nothing there.”

Ultimately, the issue may be that it’s simply the perfectly wrong moment for someone like Schultz to run for President. He’s dipping his toe into political waters at a time when some people are “literally questioning whether we should have billionaires,” says Anand Giridharadas, author of *Winners Take All: The Elite Charade of Changing the World*. That’s a conceit Schultz has called “un-American,” but it’s nevertheless the type of once-radical idea that’s now gaining traction in some parts of the country. Meanwhile, on the right, President Trump has shown he is more than willing to castigate corporate America. As both parties move away from the center, Duke University professor Aaron Chatterji says this could be

THERE’S A BIG DIFFERENCE BETWEEN THE DESIRE FOR A CEO TO TAKE A RUN AT A POLITICAL ISSUE AND THE DESIRE FOR A CEO TO RUN FOR POLITICAL OFFICE.

the first election in a very long time when neither party is vying to be the party of business.

Traditionally, the appeal of the CEO candidate was to inject the efficiency and discipline of the business world into the perceived unruliness of Washington. Giridharadas calls this the “metaphoring” of business and government—hey, I can balance the budget just like I balance my company’s books. The current administration has dismantled that narrative, argues Lee Drutman, a senior fellow at the left-leaning think tank New America. “If it hadn’t been for the Trump presidency, we would still be playing up that myth,” he says. In reality, the public and private sectors are vastly different.

“There’s an appreciation for what Schultz built at Starbucks,” says Mike Greenfield, co-founder and CEO of polling firm Change Research, “but that doesn’t translate into people saying, I need a person like this as President.”

Schultz has been accused of overreaching before. In 2015 he launched a campaign to encourage conversation about race in Starbucks stores by having baristas write Race Together on coffee cups—a disastrous move that came off as out of touch with reality. (Schultz has said, “The execution was flawed.”) Comedian John Oliver joked that the initiative showed Schultz hadn’t been told no in 25 years. Customers seemed to feel that a guy who sold coffee had no place instigating a conversation about a fraught and complex topic in such a superficial way. It was a lesson Schultz seems not to have learned: that there are some things that the public would prefer a CEO not wade into. ■

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*Warren Boyd,
Founder and CEO of Wavelengths
Huntington Beach, CA*

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FOCUS

Amir Husain,
founder of
SparkCognition,
with items from
his vast collection
of vintage
computers.



A.I. WITH HEART

A child prodigy, an immigrant, and a serial entrepreneur—Amir Husain is using his empathy to build the future of computing. Interview by Dinah Eng

Amir Husain's Austin-based SparkCognition is working on the future of A.I., covering everything from the battlefield to power plants. A boy from Pakistan who fell in love with computers at age 4, Husain is now a founding member of the board of advisers for IBM Watson and a prolific inventor, with 27 U.S. patents awarded and many more pending.

HOW I GOT STARTED



I GREW UP IN LAHORE, Pakistan, where my father was a businessman and an investor, and my mother was an educator. When I was 4 years old, I had my first experience with a computer: a Commodore 64. It blew my mind that you could control what showed up on the screen. Afterward, I went to my room, grabbed some toys, disassembled them, added cardboard, and made a contraption that I called a computer. My mom knew then that I was hooked. ▶▶

▷▷ By the time I was in eighth grade, I was bored at school. I convinced the principal and my father that I was ready to move on. So I left school and wrote software, making a few hundred dollars selling it locally.

I started college at age 15 and got my first bachelor's degree in computer science from the Punjab Institute of Computer Science in Lahore at 17. I'd been looking at laboratories all over the world, and there was one in Austin called Distributed Multimedia Computing Laboratory [DMCL] that was working on next-generation technologies for the web. That's where I wanted to work.

So in 1996, I flew to Austin with two suitcases. No one knew who I was. For me, it was about getting to that lab, but everyone said I was too young. So I got a second bachelor's in computer science at the University of Texas at Austin and talked my way into a job at DMCL at the same time.

Within the first week, I got mugged. I was doing laundry at my apartment and had \$200 in my wallet, intending to purchase textbooks, when a guy ran off with the money. I ran into a store, changed a \$20 bill into quarters, and called my mom from a pay phone. Before I could tell her anything, the thought came, "What can she do? Suck it up, smile, and get through it." I was about to cry but told her everything was fine.

In late 1999, I was working toward my Ph.D. when I dropped out to launch my first startup, Kurion. I've never been satisfied just coming up with an idea and writing about it. I want to take the idea, produce it, and apply it, so I became an entrepreneur. I spent my meager credit card limits on purchasing computer parts to build two servers and install high-speed DSL. I ran the company out of my apartment. Kurion was purchased in 2001 by iSyndicate, the largest digital content syndication company back then.

It became a very trying time after 9/11. The world flipped on its head. Just being an immigrant meant facing a lot of mistrust. There were many legislative changes and travel requirements that created a process of clearances to come to and go out of the United States. I faced a lot of discrimination then. They're very painful memories, but I believe in moving on. I work alongside many people at the Department of Defense now and don't dwell on it.

BEST ADVICE

AMIR HUSAIN
41, FOUNDER,
SPARKCOGNITION

DEFINE WHAT IS IMPORTANT AND WHAT IS A DISTRACTION.

I've experienced people stealing intellectual property and people walking away with key customers, but I didn't go after them because I couldn't afford it. Distractions will sink you because technology moves so fast. If you die on one hill, there may not be another hill to climb.

OVERCOME YOUR FEARS.

Fear puts a damper on creativity. If I knew back then what I know now, I would've made bigger bets sooner. I constantly strive to work on that.

In 2002, I married my college sweetheart, Zaib. My second company, Inframanager, a systems management company for large-scale secure computing, merged into ClearCube Technology that year.

SparkCognition became my third company. From a business standpoint, there was a lot of skepticism about artificial intelligence at first. But around 2012, I felt that things were changing with improvements in algorithms and computers. Michael Dell became my first investor through his personal MSD Capital fund. Now Boeing, CME Ventures, Verizon Ventures, and numerous others have become investors. We have raised \$72.5 million and serve some of the largest companies in the world.

SparkCognition is applying synthetic intelligence to the most critical, large-scale applications. For example, we are

working with Boeing to build the aerospace operating system of the future that will enable flying cars and beyond. We're working with Mitsubishi Hitachi Power Systems to build the world's first autonomous power plant.

We're working with the U.S. military on how A.I. can be used to save lives on the battlefield. In applying A.I. to military systems, one has to think deeply about ethics and legality while enabling superior capability; it's a tough challenge. We're working with the largest players to make the potential of A.I. real.

A startup is one of the most difficult things you can voluntarily do. It tests your marriage, your relationship with your children, physical stamina, emotional intelligence, and stress levels. I rarely get a full night's sleep, but I include my family in everything I do. I open every idea in my mind to them, sharing why I'm doing this, why I have a serious commitment to building the future, and the responsibilities involved in that. I don't know what work/life balance is because for me, it's all one thing. There's no work or life—there is only existence and putting one foot in front of the other. ■

Meeting the Challenge to Move Forward

Texas Health Resources helped certified surgical technician Angelina Razo reach new career heights.



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ANGELINA RAZO,
CERTIFIED SURGICAL
TECHNICIAN

ANGELINA RAZO EXUDES CONFIDENCE

when she talks about her exacting role as a certified surgical technician. Her job is critical. She makes sure all supplies, equipment, and instruments are ready in the operating room before lifesaving procedures begin. Then, she's the one who puts the right tool in the surgeon's hand at the right time. "We don't waste a moment," she says. "Everything happens in an efficient and timely manner."

Razo says she never feels daunted, thanks to her employer, Texas Health Resources, a network of 27 hospitals with 350 points of access and 25,000 employees serving the northern part of the state. Texas Health helped build her confidence, she explains, by urging her to push herself to learn new techniques and reach for new career heights.

"I started working with Texas Health six years ago, fresh out of college. Back then, my skills were pretty basic," Razo explains.

"I could handle straightforward procedures like gall bladder or appendix operations, which can take 30 minutes or an hour." But Razo's manager, Karen Brittain, recognized her potential and urged her to think beyond what she was doing. "She wanted me to grow and evolve," Razo recalls, "and encouraged me to go for more, expand my knowledge, develop my abilities, and to diversify."

Razo met the challenge to leave her comfort zone—and then some. Today she's part of the OR teams that handle intricate six-hour vascular procedures, complex eight-hour robotic surgeries and demanding 12-hour heart operations. Throughout it all she must remain sharp, professional, and poised.

"Texas Health gave me all the tools I needed to move forward. I never for one moment thought, 'I'm doing this on my own. It's so scary,'" Razo says. "We're team-oriented." Texas Health provides her with computer modules, pays for her to continue her education, and gives her hands-on opportunities to work with nurses and doctors who teach and help her to grow in the field.

"And Karen has taught us to live by our values—to be respectful, have integrity and compassion for our patients—and to be excellent so we can give our communities the best possible healthcare," Razo says. "That's the culture at Texas Health—and it's reflected in everything we do." ●





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Mayor, Guangzhou



Richard Socher
Chief Scientist,
Salesforce



Jennifer Zhu Scott,
Founding Principal,
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The 2018 Fortune China Innovation Award Winners with Guangzhou Automobile Group Co., Ltd. President Feng Xingya and Fortune President and CEO Alan Murray.



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THE PROS AND CONS OF POLITICS

Shareholders get justifiably nervous when a company takes a stand on a divisive social issue. But when the right brand sends the right message, the results can be good for sales and stocks alike. **By Ryan Drousseau**

INVEST YOU DON'T HAVE to watch Gillette's recent commercial for long to realize it's no typical shaving ad. There are no shots of blades gliding through lather or water splashing on a freshly trimmed face. Instead, the ad shows men standing up to bullies and sexual harassers, all part of a message about resisting "toxic masculinity."

It's more social plea than sales pitch—and it's the kind of gesture that's far more common now than it was a decade ago. Whether it's Nike's ads last fall supporting quarterback turned activist Colin Kaepernick, or Dick's Sporting Goods' decision last year to restrict its own gun sales, companies are more willing

to take sides on politically divisive issues. And such stances can be more than acts of principle: They can boost sales, luring customers who share the same views—albeit while alienating those who don't—and helping brands stand out in crowded product categories.

Whether shareholders can cheer the returns is less clear-cut. Edgy statements often chase skittish investors away in the short term: The stocks of Dick's, Nike, and Gillette parent Procter & Gamble fell sharply immediately after they made the moves described above. But Nike subsequently reported blockbuster growth, and all three stocks rebounded to outperform the S&P 500 through mid-Feb- >>



ASSESSING THE CHANCES OF THOSE WHO TAKE STANCES

These three companies have made headlines for their messaging on divisive political and social issues. Here's how their core businesses are faring.

NIKE [NKE, \$83]

Last September, when Nike featured Colin Kaepernick in ads marking the 30th anniversary of its “Just Do It” campaign, customers who had viewed Kaepernick’s pre-NFL-game protests as anti-patriotic decried the company. But revenue jumped 10% in that quarter. Nike’s e-commerce site now accounts for 15% of sales, and Jamie Merriman, a Bernstein analyst, notes that its profit margins improve as the number of online buyers grows.

STARBUCKS [SBUX, \$69]

The coffee giant’s stock has seesawed for years in response to the company’s outspokenness on same-sex marriage, racial relations, and much more. Still, shares are up 94% over the past five years, far outpacing the S&P 500. Expansion in China and in U.S. suburbs should sustain Starbucks’ sales growth. Yet to be determined: the financial impact of retired chairman Howard Schultz’s presidential ambitions [see page 32].

DICK’S SPORTING GOODS [DKS, \$36]

After the Parkland shootings, Dick’s stopped selling assault rifles and increased its minimum age for gun purchases to 21. Some gunmakers severed ties, and Dick’s stock slumped, owing in part to weak hunting-equipment sales. Dick’s has struggled as well in athletic apparel, where many brands it offers also sell direct online. But if it can boost its own e-commerce, Dick’s could reward investors who buy in at today’s low valuations.

that government lacks the ability to address the issues most important to consumers—so consumers are looking to businesses to fill that role.

Which companies benefit from speaking out? No two situations are alike, but some patterns are emerging. If a company has a reputation for social engagement or takes a stand that’s clearly in line with its brand’s philosophy, sales and shares are more likely to get a lift. If a company makes a statement that doesn’t match the way people already feel about it, shareholders are less likely to benefit. Likewise, if a stance is more reactive than proactive: Delta Air Lines won praise from some corners when it ended a discount for National Rifle Association members after a school shooting in Parkland, Fla., last year. But the airline framed it as a one-time move, and the ensuing publicity didn’t have a big impact on either ticket sales or the share price.

Roughly a month after Gillette’s toxic-masculinity message went live, it’s too early to discern its long-term impact on P&G’s stock. (For more about other challenges facing P&G, see our feature on page 104.) Shaving products such as Gillette’s accounted for only 10% of P&G revenue in fiscal 2018. But the company owns big consumer brands that are targeted predominantly at female buyers, including Venus razors and Always feminine-

▷▷ ruary. (P&G hit an all-time high.) That’s a small sample size, to be sure, but it sends a message: Under the right conditions, speaking up can boost sales and customer loyalty, without weighing down share prices.

Evolving consumer attitudes help explain the pattern. According to a recent poll by public relations firm Edelman, roughly 50% of consumers have chosen to buy a brand (or not) because of the business’s position on a controversial issue. Melissa Dodd, a public relations professor at the University of Central Florida, says there’s a widespread perception

INVEST

care products, and has previously run ads conveying its commitment to gender equity. The Gillette ad could be seen as doubling down on that stance—and a positive reaction among women could spill over to benefit other brands, according to Daniel Korschun, a Drexel University professor.

If that happens, Korschun says, P&G will likely henceforth be “held to a higher standard” on social issues, risking a backlash if it changes course. Once a company gets political, in other words, backtracking can be costly—for management and shareholders alike. ■

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THE NEW POWER BLAZER

How a symbol of rebellion found its way into the boardroom.

By Kristen Bellstrom

AS A CEO SUMMONED to Capitol Hill to face angry lawmakers, selecting your outfit—and therefore the silent message you’ll telegraph on camera—is far from trivial. Safe choices might include the Navy Blazer of Contrition or the dove-gray skirt suit that whispers, “I’m important—but not more important than you, Senator.”

So it was a bit of a sartorial shock last December when General Motors CEO Mary Barra appeared in D.C. to defend the automaker’s decision to close four U.S. plants and lay off some 14,000 workers. She wasn’t sporting textbook corporate wear but rather a sleek black leather jacket.

It was not the first high-stakes occasion in which Barra chose leather over more pedestrian options. Her glossy hide jackets have



Yves Saint Laurent’s classic moto jacket in calfskin, \$4,990 at Neiman Marcus.

appeared at GM shareholder meetings, product launches, countless media interviews, and confabs of the global elite (she once donned a hot-pink biker at Davos). Although Barra opted not to comment on her wardrobe choices for this story, her representative would allow that the CEO “does have quite the col-

lection.” And the auto chief is far from the only top female executive who’s embracing the look. Leather jackets have become a go-to for CEOs ranging from Nasdaq’s Adena Friedman to IBM’s Ginni Rometty to Kohl’s Michelle Gass, as well as a host of startup chiefs.

So how did the leather jacket—▷▷

▷▷ a garment long associated with counterculture—become a staple of boardroom power dressing? Unlike, say, the burnt-orange coat that rose to fame last year after Nancy Pelosi's memorable White House exit, the leather jacket hasn't had the kind of iconic moment that would send image consultants scurrying to the outerwear department.

Instead, the garment glided gradually into the business world on the back of a pair of otherwise unrelated trends: the leather jacket's shift from emblem of rebellion to status symbol, and the casualization of corporate America.

From Marlon Brando in *The Wild One* to Debbie Harry playing CBGB, the leather jacket spent decades as the ultimate signifier of outsider status. But eventually that iconoclastic attitude caught the eye of high fashion. (One notable appearance: Donna Karan's early and transformative take on women's work wear.) It quickly grew into a couture staple, commanding price tags of \$5,000 and up.

The shift from grunge to luxe came at the perfect moment. In the mid-aughts, the corporate world was struggling through an era of fashion chaos. The rise of the hoodie-wearing tech founder was driving the old rules about "appropriate" work wear toward obsolescence. For some female executives, the leather jacket offers a solution to the casual quagmire and, thanks to its rich history, sends an unusually complex message.

"It's coded in power, strength, resistance. It's kind of subversive," says Emma McClendon, associate curator of costume at the Museum at FIT. Yet now that leather is considered a luxury item, it can also "do a bit of the talking as far as your capital and status in the room," she says. Executive stylists sing the praises of a leather jacket over a



ELLE FOR LEATHER

From left: Michelle Gass, CEO and director of Kohl's; Adena Friedman, CEO of Nasdaq; Mary Barra, CEO of General Motors; Ginni Rometty, CEO of IBM; Sallie Krawcheck, CEO of Ellevest.

dress or skirt—a look that blends traditional femininity with the authority of a jacket. "It's structured, it's tailored, it's sexy yet professional," says stylist Ariel Lawrence.

Ellevest CEO Sallie Krawcheck bought her first leather jacket (and got her first tattoo) not long after a "very cathartic weekend" spent jettisoning all the "matchy-matchy suits" she wore in her prior career in banking. The garment has since become something of a signature. "It looks strong," she says. "It occupies the space between an Armani structured jacket and a sweater."

For executives willing to step out of the basic-black box, leather can also command attention. Mindy Grossman, CEO of WW (*née* Weight Watchers), has a self-described "obsession" with leather

jackets. She wore her prize acquisition, a dramatic McQueen peplum biker with red floral embroidery, to her last board meeting and then out to dinner with the board's most famous director: Oprah Winfrey. When the CEO posted a photo of the evening on Instagram, she received the comments you'd expect about her dining companion—but even Oprah could not totally outshine the McQueen. "Every other response was about my jacket," says Grossman.

Of course, the trend has not gone unnoticed in the retail world. Yujin Heo, VP of creative at Neiman Marcus Group (and the proud owner of about 10 leather jackets), says the company has responded to growing demand by stocking the once-seasonal item year-round and by offering new lines like Nour Hammour, a French leather specialist. And if retailers' plans are any indication, the jacket is just beginning its C-suite tenure. Among the trends Macy's fashion office has flagged for its employees to push this year: "Leather in the Boardroom." ■



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CONTENT FROM KEYSIGHT

GIVING COMPANIES A HEAD START IN THE RACE TO 5G

Keysight Technologies provides customers with electronic design and measurement solutions to help them accelerate along the path to greater innovation.

THE TRANSITION TO FIFTH generation (5G) mobile wireless services is just starting and accelerating on a global scale. This evolution to the next mobile wireless standard involves a complex interplay of technologies that continue to expand, enhance, and improve. These advances will enable ultrafast service and capabilities, impacting everything from autonomous vehicles and intelligent manufacturing to smart cities and innovative healthcare.

Keysight Technologies is at the center of this new standard. The Santa Rosa, California-based company provides world-class electronic design and measurement solutions that help customers accelerate their technology innovations. They understand that

Deploying 5G requires overcoming challenges in developing new hardware and software, designing more advanced networks, increasing the radio wave spectrum, and upgrading vast amounts of physical infrastructure.

deploying 5G also requires overcoming challenges in developing new hardware and software, designing more advanced networks, increasing the radio wave spectrum, and upgrading vast amounts of physical infrastructure. The most impressive aspect of the current 5G roll-out is that technical developments occur simultaneously and at a very fast pace.

The dramatic increase in Internet of Things (IoT) devices, innovations such as augmented and virtual reality (AR/VR), robotics, and artificial intelligence (AI), as well as ubiquitous mobile 5G capabilities, will all require dynamic scalable networks that offer increased capacity. As service providers, chipmakers, network infrastructure vendors, and device manufacturers move from prototypes to real-world 5G trials and early commercialization, they

all require accurate and detailed data to uncover performance issues and bottlenecks.

“You see issues at scale, and that’s a particular concern to service providers,” says Mark Pierpoint, SVP and President, Ixia Solutions Group at Keysight. “Vendors testing for realistic problems are not going to come across issues that happen at scale in isolation. But issues around scale do occur, especially when they interoperate with other vendors, and that’s where Keysight has unique solutions that provide end-to-end network simulation and validation.”

MORE SPECTRUM

Perfecting radio access technologies is a crucial part of the transition toward increased 5G commercialization. These technologies take advantage of low- and high-frequency spectrum to support massive numbers of connected devices,

ensure highly reliable communications, and increase network speed and capacity. For example, the high-frequency millimeter wave spectrum (24-52 GHz) provides the wider bandwidths and high data rates critical to 5G performance.

In addition to hardware, software, network, and 5G protocol analysis, Keysight Technologies is actively engaged in the development of the global 5G standards to ensure feasible and comprehensive test capability. “5G’s complexity requires an end-to-end, agile development approach. We’ve been contributing technical input and driving decisions working alongside our global customers, and in some cases even

our competitors, to ensure that the 5G standards allow for interoperability,” says Satish Dhanasekaran, SVP and President, Communications Solutions Group at Keysight. “It’s a big part of our strategy—progressing the standards

to enable faster commercialization with a common road map.”

As 5G moves closer to reality, prototypes and trial deployments are crucial for 5G stakeholders to understand the real problems that happen

when they implement 5G hardware, software, and networks. Keysight’s expertise and innovative solutions enable deeper insights as the 5G ecosystem evolves and real-world deployments accelerate. ●



ABOUT KEYSIGHT TECHNOLOGIES

EVERYWHERE THE ELECTRONIC SIGNAL goes and data flows, Keysight is there to help innovators design, test, manufacture, and optimize their technology breakthroughs with trusted hardware and software solutions, services, and a global network of experts.

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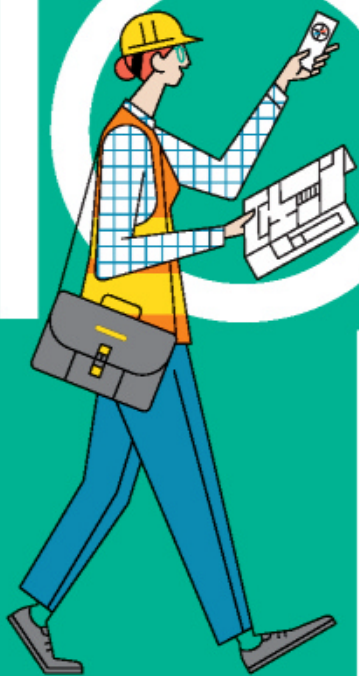
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100 BEST COMPANIES TO WORK FOR 2019



BY MICHAEL
C. BUSH AND
CHRISTOPHER
TKACZYK

• **INNOVATION BY ALL.** How do you encourage it? How do you harness it? And most important, how do you make sure you're not stifling it? As we talked to top-performing companies of every size and across every industry on our 22nd annual list, the challenge of getting the best ideas from all your employees is the theme that came up more >>

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WITH ADDITIONAL REPORTING BY
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▷▷ than any other. One obvious example is at our new No. 1: Hilton. Relying on a Millennial Team Member Resource Group is just one of the ways this 100-year-old hospitality company is making sure all employees (in this case, its youngest) get a chance to contribute their best ideas. Attempting to “actively solicit input, new ideas, learnings, and experiences” has become paramount, says Hilton’s chief human resources officer Matthew Schuyler.

Elsewhere on our list, Cisco (No. 6) is developing more and more programs to seed innovation, such as an annual companywide competition in which employees can “invest” tokens in the best ideas (the contest has led to seven proofs of concept and eight patents). Indeed, this list includes dozens of role models for encouraging innovation (which is also

the theme of our February Great Place to Work for All Summit). Still, we wondered: Could this magic formula be quantified?

This past summer, the team of data scientists and researchers at Great Place to Work set out to discover what helps set these organizations apart from their peers. As a result, we developed a new metric, which we call the Innovation Velocity Ratio (IVR). It’s a measure that quantifies the friction a company’s employees experience when it comes to having opportunities to develop new ideas, products, or processes. The lower your friction, the higher your score.

In our initial sample of more than 800 certified Great Place to Work companies, many of them scored at the highest level of innovation. Additionally, when comparing IVR against financial perfor-

mance, we discovered the top-performing companies on our scale saw average year-over-year revenue growth 5.5 times as high as that of their lowest-scoring peers in the data set.

Using the IVR model, we took a closer look at this year’s 100 Best Companies to see how they fared. Here’s what we found:

- The 100 Best Companies offer much more innovative workplace environments compared with companies nationwide, with seven employees feeling empowered to innovate for every two who do not. The top 10 companies of the 100 Best Companies have even stronger Innovation Velocity Ratios; one company’s IVR is an impressive 23 to 2.

- Leaders have a very strong influence on how employees perceive the level of innovation at their company. For example, employees with manag-

ers who are approachable and easy to talk with are *31 times* more likely to think their company is innovative. And when employees say management genuinely seeks and responds to suggestions and ideas, they are 14 times more likely to think their workplace is innovative (and four times more likely to think it’s a great place to work).

To find out how you can calculate your company’s IVR, visit greatplacetowork.com. It might just be the first step toward appearing on a future Best Companies list.



MICHAEL C. BUSH is CEO of Great Place to Work and coauthor of *A Great Place to Work for All*.

CHRISTOPHER TKACZYK is the chief content officer. **Sarah Lewis-Kulin, Travis Minetti, Kim Peters, Tabitha Russell Wilhelmsen, and Otto Zell** also contributed to this project.

METHODOLOGY

People analytics firm Great Place to Work determined the *Fortune* 100 Best Companies to Work For list and the *Fortune* Best Big Companies to Work For list by conducting America’s largest ongoing annual workforce study, representing more than 4.3 million employees this year.

To be considered, companies submit an application documenting over 200 data points describing their HR programs and practices. Great Place to Work then conducts an anonymous survey of each company’s workforce. Employees responded to over 60 survey questions describing the extent to which their organization

creates a Great Place to Work.

To ensure surveys truly represent all employees, we require enough people in each organization to respond so that results are accurate to a 95% confidence level and 5% margin of error or better. One part of the total score is based on our evaluation of company programs and poli-

cies, while three parts come from our analysis of employee survey data.

We review any anomalies in survey responses, news, and financial performance to ensure there aren’t any extraordinary reasons to believe we couldn’t trust a company’s survey results. Companies need to employ at least

1,000 U.S. employees to be considered for the 100 Best Companies list, and at least 100,000 U.S. employees to be considered for the Best Big Companies to Work For list. Government agencies are not eligible.

To find out more about the survey methodology or to apply for this or other Best Workplaces lists, visit greatplacetowork.com.



HILTON

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 EMPLOYEES 62,403
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A FEW YEARS AGO, while in downtown Cleveland for the opening of a brand-new Hilton hotel, Chris Nassetta had a chance to try on the staff uniforms. “I put on a housekeeper’s jacket and I’m like, Wow, this is heavy,” the Hilton CEO told *Fortune* recently. “It didn’t feel very comfortable or flexible, and I’m thinking, We got this wrong—we’re not giving them the right clothing to wear.” Nassetta and his team decided that changes

were in order; in early 2018 the company launched a partnership with Under Armour to have the sports apparel giant redesign lighter, more comfortable work wear.

That’s just one of several employee-focused changes that have crowned the 100-year-old Hilton as the Best Company to Work For in America. It’s sweet validation for Nassetta, who upon taking the reins at Hilton in 2007 found an organization that “had lost our way a bit,” he said. “We forgot that we are a business of people serving people, and the corporate environment got very disconnected from the front line.”

Under Nassetta’s guidance, Hilton has launched an expansive program to upgrade “back-of-house” areas used by staff to make them as spiffy as the areas guests use. As seen on a recent visit to the New York Hilton Midtown, renovated employee spaces featured better lighting and more comfortable furnishings, as well as an updated cafeteria (free for most employees) with TVs and even massage chairs for folks on break. The company has also established a free program enabling employees to earn their GEDs and formed Hilton University where they can enroll in workshops and training. According to the Great Place to Work Institute, Hilton outperforms when it comes to satisfaction among typically more disenfranchised “line-level” workers, such as cleaning and kitchen staff.

With the stock up 274% from its IPO price in 2013, investors are no doubt cheering the employee-first changes too. Says Nassetta of his staff, “I am obsessed with taking care of them.” Sounds like a formula for a long stay as a Best Place to Work.

—*Rey Mashayekhi*

• THE 100 BEST COMPANIES TO WORK FOR •

2
SALESFORCE

HQ San Francisco
EMPLOYEES 21,783
JOB OPENINGS 6,621

INCLUSION PAYS at Salesforce, which has spent \$8.7 million over three years to address differences in pay across gender and race. As for wellness? The goals system, V2MOMs (Vision, Values, Methods, Obstacles, Measures), now includes well-being objectives alongside more traditional career mileposts; more than half the offices have Mindfulness Zones.

3
★ WEGMANS FOOD MARKETS

HQ Rochester, N.Y.
EMPLOYEES 48,808
JOB OPENINGS 2,000

CAREER ADVANCEMENT in aisle 12: The booming family-owned grocery chain spends more than \$50 million a year on training and development for its massive workforce, and is one of the few grocers to help defray school costs—this year it awarded \$5 million in tuition assistance. “It’s nice to work for a company that keeps giving instead of taking away,” says one employee.



A lot that’s delicious: Wegmans combines a mouthwatering selection for shoppers, and growth opportunities for workers, at its 90-plus locations.

AT SALESFORCE, MINDFULNESS IS TOP OF MIND. ↓



4
WORKDAY

HQ Pleasanton, Calif.
EMPLOYEES 7,962
JOB OPENINGS 1,330

HOW DO YOU achieve diversity? With data. A new chief diversity officer monitors real-time data on the workforce, including pay equity, time to promotion, and turnover, at this Bay Area finance and HR software provider. As of last year, all staff have received unconscious-bias training. A bevy of awards, like 8,485 stock bonuses for meeting goals, helps motivate the troops.

5
KIMPTON HOTELS & RESTAURANTS

HQ San Francisco
EMPLOYEES 8,813
JOB OPENINGS 630

EMPLOYEES at the boutique hotel and restaurant company describe its corporate culture as “thoughtful.” Those at every level are encouraged to create magical moments for guests (and are rewarded with Kimpton Moment chips they can trade for prizes like paid days off and Apple Watches); management does the same for staff, with gestures like spa gift cards.

6
★ CISCO

HQ San Jose
EMPLOYEES 37,352
JOB OPENINGS 2,814

CALLING ALL innovators! The IT company continues to find new ways to engage its 37,000-plus employees. Cisco emphasizes community, giving every employee 40 hours of paid time off per year to volunteer, and has won praise for directly addressing the Bay Area’s homelessness crisis via a \$50 million commitment to nonprofit Destination: Home.

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EACH GREEN STAR DENOTES AN ALL-STAR COMPANY: ON THE BEST COMPANIES LIST FOR 20 YEARS OR MORE

HOW WE ... SUPPORT WORKING PARENTS

FORGET CASHING in your AmEx points for discounts on diapers—harried new parents may want to just apply for a job at American Express [No. 13]. A 2017 overhaul of parental benefits expanded leave to 20 weeks, increased coverage of surrogacy and adoption, and paid for nursing moms to ship breast milk home while traveling on AmEx business. It also marked the introduction of the Parent Concierge, a 24/7 team that offers one-on-one support to help working parents navigate their options and make sure they're not missing out on any benefits or discounts. Top requests include comparison of health plans and fertility coverage, assistance finding adoption and surrogacy agencies, help finding childcare or backup day care, and support for breastfeeding and pumping after returning to work. "[The concierge] helped us research day cares, pediatricians, doulas, birth classes, etc.," says one expectant parent. "It has been amazing and a huge time saver." Now if only AmEx could do something about those nighttime feedings. —KATE FLAIM



A factory of ideas: At Stryker, employees are urged to contribute to the firm's development.

11 STRYKER

HQ: Kalamazoo • EMPLOYEES: 19,232 • JOB OPENINGS: 1,590

THE FORCE IS WITH THEM! At this medical devices company, a *Shark Tank*-style competition encourages workers to pitch their ideas for development and funding. Also worth noting: "Stryke Force" externships in conjunction with Notre Dame, tuition reimbursement, and on-site fitness facilities, plus subsidized childcare at some locations.

7 ★ EDWARD JONES

HQ St. Louis
EMPLOYEES 45,085
JOB OPENINGS 4,166

THEY'RE IN IT for the long haul at this financial services firm: Annual turnover is an extremely low 5%. A robust mentorship program [one in three financial advisers serves as a mentor] makes new hires feel supported. When disasters hit, a cross-divisional crisis management team goes into overdrive, helping staff and continuing to pay those who can't get to work.

8 ULTIMATE SOFTWARE

HQ Weston, Fla.
EMPLOYEES 5,274
JOB OPENINGS 1,000

IN COMMENTS, employees uniformly refer to "relaxed, unassuming, and warm" CEO Scott Scherr as "Scott" and emphasize a company culture in which top executives are visible and accessible, with "no executive floor or special key in the elevator." Two great perks: Employees get \$300 per year toward kids' extracurricular activities, and veterans get an annual cash bonus.

9 TEXAS HEALTH RESOURCES

HQ Arlington, Texas
EMPLOYEES 22,005
JOB OPENINGS 944

CORE VALUES rule at this nonprofit network of 350 hospitals and health care facilities. "Our Texas Health Promise" is reinforced through monthly training sessions, awards ceremonies, and a team of 70 peer "promise coaches." As part of a mission to support veterans, the company increased veteran hiring by 21% in one year and pads reservist pay during deployments.

10 THE BOSTON CONSULTING GROUP

HQ Boston
EMPLOYEES 16,000
JOB OPENINGS N.A.

THE WHITE-SHOE consulting firm strives to support junior associates, from grad school test prep and essay feedback to average tuition reimbursement of \$17,386 per year, the highest on the list. "There is a lot of opportunity and empowerment to explore individual interests and passions," says one employee. "Everyone can be an entrepreneur," adds another.

12
★ PUBLIX SUPER MARKETS

HQ Lakeland, Fla.
EMPLOYEES 200,000
JOB OPENINGS 7,000

THIS GARGANTUAN grocer offers aisles full of perks: tuition reimbursement, a stock purchase program open to all employees, and even on-site ESL classes at many locations. Says one employee, who moved from Iraq five years ago and is aiming to be a manager: “My ability to communicate with customers has improved because of these classes.”

13
AMERICAN EXPRESS

HQ New York
EMPLOYEES 55,000
JOB OPENINGS N.A.

CAN YOU HAVE it all? Yes, if you work at AmEx, which has sharpened its focus on helping employees achieve work/life balance. The financial giant offers telecommuting, flexible scheduling, compressed work-weeks, and generous parental leave—about five months. “Whatever happens in my personal life, I’ll be able to balance it [at work],” says a dad of three.



Quick change: Quicken has lured hundreds of young workers to its downtown Detroit HQ.

14 QUICKEN LOANS

HQ: Detroit • EMPLOYEES: 15,307 • JOB OPENINGS: 724

EMPLOYEES AT THE DETROIT-BASED mortgage lender (the biggest in the U.S.) are proud of the company’s commitment to revitalize its hometown. “The fact that Quicken is essentially redeveloping an entire major American city is an amazing achievement,” says one. The company has spent more than \$5.6 billion buying and restoring buildings downtown since 2010, helped more than 15,000 local homeowners avoid tax foreclosure, worked to clean up blighted neighborhoods, and invested millions in local entrepreneurs. Meanwhile, employees enjoy award-winning training and development programs, including the Z Games, a citywide scavenger hunt “intended to push [employees’] personal limits and reveal their leadership style.”

15
ORRICK

HQ San Francisco
EMPLOYEES 1,561
JOB OPENINGS 54

A COMMITMENT to buck stereotypical law firm culture starts at the top, with “amazingly human” CEO Mitch Zuklie. Orrick’s focus on diversity has resulted in stellar hiring stats [88% of students hired as summer associates in 2018 were women, minorities, or LGBTQ] and strong retention rates. Meanwhile, reducing anxiety is a top priority.

16
BAIRD

HQ Milwaukee
EMPLOYEES 3,472
JOB OPENINGS 140

THAT’S RESPONSIVE! At a recent panel discussion at this employee-owned financial services firm, a question from the audience about parental leave policies led to a more generous policy within 10 weeks—including retroactive benefits. Millennial reverse-mentoring helps keep senior management connected to its younger counterparts.

HOW WE ...
**LEARN FROM
MILLENNIALS
ON STAFF**

NEXT STOP: Presentations via Instagram Live? Financial services firm Baird (No. 16) has recognized the generational shift that all businesses face over the next decade and is experimenting with a new way of engaging with the roughly 30% of its workforce who qualify as millennials. CEO Steve Booth approached the talent development team in 2017 with a request: Connect boomer-age leadership with the younger generation at the firm. Within months, a group of 10 senior leaders had been paired with junior counterparts for a reverse-mentoring program. The millennials drive the conversation on everything from debunking generational stereotypes to developing millennial-conscious business strategy and building relationships with next-gen clients. “[My mentee] Bill asked what keeps millennials like myself at a company like Baird,” says Zach Arndt, a branch administrative manager who mentored Bill Mahler, Baird’s chairman of equity capital markets. “My answer was simple—it’s engagements like this.” —K.F.

17
★ **JM FAMILY
ENTERPRISES**

HQ Deerfield Beach, Fla.
EMPLOYEES 4,188
JOB OPENINGS 129

IT’S “FAMILY” through thick and thin at this automotive services powerhouse. It went into overdrive with \$340,000 in grants plus time off and counseling to support families impacted by hurricanes, the nearby Parkland school shooting, and other crises. For its 50th anniversary, a five-city “Route ‘68” party featured Jon Bon Jovi, Wayne Brady, and The Illusionists.

18
KIMLEY-HORN

HQ Raleigh, N.C.
EMPLOYEES 3,541
JOB OPENINGS 419

THIS “FIERCELY and proudly employee-owned” planning and design consulting firm is a haven for those who work well with others. Employees say, “Teamwork is huge here,” and “I know I can go to anyone and they will stop what they are doing to walk me through something.” The firm is also one of just 10 list members offering health care plans that cover 100% of costs.

19
**CAMDEN PROPERTY
TRUST**

HQ Houston
EMPLOYEES 1,651
JOB OPENINGS 77

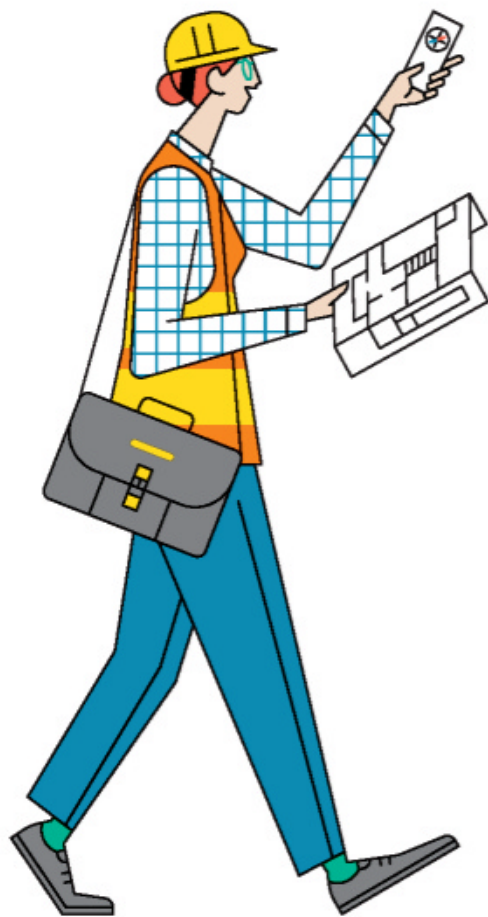
AT THIS Houston-based real estate company, hiring focuses on cultural fit vs. prior experience. Camden also puts serious weight behind employee development, spending \$3.5 million per year on training programs. The result: a 40% internal promotion rate. Employees repeatedly comment on the positive vibes: “This company cares,” says one.

21
★ **PLANTE MORAN**

HQ Southfield, Mich.
EMPLOYEES 3,162
JOB OPENINGS 269

IT’S NOT ALL about the bottom line at this accounting and financial services firm—“people watch out for each other,” says one, helping out with everything from workload to personal issues. A well-developed three-year internal fellowship program lets staff find new paths; the firm also offers substantial tuition reimbursement for those pursuing a master’s in taxation.

→ **KIMLEY-HORN EMPLOYS ENGINEERS—WHO ARE ALSO THE FIRM’S OWNERS.**



20
COOLEY

HQ Palo Alto
EMPLOYEES 1,942
JOB OPENINGS 89

OVER THE past two years, the Palo Alto-based law firm has paid special attention to attorneys in the tricky yet often-overlooked transition between junior associate and partner with its Mid-Level Academy. It encourages pro bono work (even earning a top public service award from the American Bar Association) and ties compensation to contributions beyond revenue.

22
ADOBE

HQ San Jose
EMPLOYEES 10,912
JOB OPENINGS 2,500

ADOBE is designing a more equitable workplace: “We have gone from an occasionally uncomfortable place to work to a place where I feel fully supported as a woman,” says one employee. The Women’s Executive Shadow Program is helping develop female leaders, while bonuses here take collaboration (not just individual achievement) into account.

23

VETERANS UNITED HOME LOANS

HQColumbia, Mo.
EMPLOYEES2,367
JOB OPENINGS111

ANY EXCUSE to party! This loan specialist throws bashes for occasions ranging from birthdays to 'welcoming the seventh employee named Emily to a department.' In addition to crawfish boils, game nights, Valentine's Day lunch, and eclipse-viewing parties, personal milestones are celebrated: 'VU gave me a 'first home' housewarming gift,' raves one employee.



Pasta, anyone? The Cheesecake Factory wants its workers to experience the restaurant as customers do, so diners' expectations can be exceeded.

28

SAP AMERICA

HQ Newtown Square, Pa.
EMPLOYEES19,411
JOB OPENINGS4,300

EVEN PART-TIMERS who work at least 24 hours a week at the German software giant's American division get the full-time benefits package. And for young folks trying to get a foot in the door, there is the Internship Experience Project: a six-month, full-time paid program that hired 310 recent college graduates last year and has a 50% retention rate.

24

INTUIT

HQ Mountain View, Calif.
EMPLOYEES6,939
JOB OPENINGS667

IN THE—HMM, how shall we say it?—historically male-dominated software industry, 'we actively choose to nurture a diverse and inclusive culture and to courageously stand up for what we believe,' the company writes. Proof in action: In 2017, Intuit took the unusual step of openly sharing pay info and is working to close the pay gap across gender and race.

25

THE CHEESECAKE FACTORY

HQ Calabasas Hills, Calif.
EMPLOYEES 37,704
JOB OPENINGS2,300

THE RESTAURANT chain doesn't skimp on portions—or benefits for employees. It offers a variety of programs, like the Diploma and Degree Program for kitchen staff to earn GEDs or associate's degrees at no cost. Last year, 46% of junior manager positions were filled internally; the average full-time server's total pay was more than \$50,000, double the national mean.

26

★ DELOITTE

HQ New York City
EMPLOYEES84,890
JOB OPENINGS5,697

WHERE DO you see yourself in 10 years? Deloitte will help get you there with Career Navigator, a tool for personnel to evaluate their career track and the various paths available. Deloitte also recently launched Inclusion Councils in 30 of its offices across the country, an effort meant to establish a communal space to discuss shared concerns and interests.

27

PINNACLE FINANCIAL PARTNERS

HQ Nashville
EMPLOYEES2,344
JOB OPENINGS225

PERSONNEL is personal at financial services firm Pinnacle, where with just over 2,000 employees, there's not a lot of hierarchy. Founder and CEO Terry Turner personally conducts the three-day orientation for new hires, and since all associates are part-owners of Pinnacle, they meet with Turner on a quarterly basis to discuss the company's performance.

29

NAVY FEDERAL CREDIT UNION

HQVienna, Va.
EMPLOYEES16,385
JOB OPENINGS393

THE NATION'S largest credit union prides itself on a fun, family-like corporate atmosphere, including an annual red-carpet awards gala to recognize accomplishments. It has also amped up education with electronic learning, certificate programs, a micro-learning portal, and Connect Four—a year-long directed exploration process for those not sure of their path.

• THE 100 BEST COMPANIES TO WORK FOR •

HOW WE...
ENCOURAGE EVERYONE TO INNOVATE (ALL THE TIME)

A FEW MONTHS before Chuck Robbins took over as CEO in 2015, Cisco [No. 6] conducted a series of focus groups to solicit employee feedback. A consistent theme: People felt they simply couldn't get ideas in front of decision-makers.

Within months, the IT networking giant created a forum for just this purpose. Cribbing from *Shark Tank*, the company launched a global pitch contest called the "innovate everywhere challenge." People could submit ideas or sponsor others' proposals with virtual "venture tokens." Through multiple rounds, thousands of contenders are whittled down to six finalists who fly out to San Jose to vie for the backing of bosses and real investors. Grand prize: \$50,000 in cash and seed funding, plus mentorship.

One winning team came up with a way to predict network outages using machine learning. Another developed a tool to automatically transfer license keys for Cisco devices. Employees say the challenge has permeated Cisco's culture bottom to top—and decision-makers are listening. —ROBERT HACKETT

30
USAA

HQ.....San Antonio
EMPLOYEES.....34,168
JOB OPENINGS.....2,352

SAN ANTONIO-based USAA meets the needs of America's military members and their families, and it brings the same dedication to its own employees. Full-timers get 31 days of personal time off in their first year. New moms get 95 days paid leave, while dads get 60 days. Active members of the armed forces are eligible for 480 hours of full pay per year when called for duty.

31
★ MARRIOTT INTERNATIONAL

HQ.....Bethesda, Md.
EMPLOYEES.....133,238
JOB OPENINGS.....7,165

THE HOTEL behemoth has long helped elevate women and minorities, who make up 54% and 65% of its workforce, respectively. All employees have access to MyARL, which offers 24/7 access to counseling and referrals for everything from legal help to childcare. Marriott is also prioritizing employee well-being via its companywide TakeCare corporate culture initiative.

32
HYATT HOTELS

HQ.....Chicago
EMPLOYEES.....42,520
JOB OPENINGS.....19,115

IT'S EASY for hierarchies to take hold across a service-based enterprise, but Hyatt is having none of it. The chain prioritizes an inclusive culture dictated by an "Everyone's a housekeeper" mantra, to remind employees "no single job is more important than another." Hyatt has also been remodeling employee dining rooms to make them closer to what guests experience.

34
★ EY

HQ.....New York City
EMPLOYEES.....48,274
JOB OPENINGS.....3,500

THIS ACCOUNTING giant looks beyond the numbers. EY's We Care program prioritizes the emotional well-being of employees, with a focus on mental health and substance addiction, relationship issues, and grief counseling. Diversity is also a strong suit, including a mentoring program designed to connect EY leaders with minority employees across the organization.

↑
AT USAA, GENEROUS POLICIES INCLUDE 31 PAID DAYS OFF.



33
CARMAX

HQ.....Richmond
EMPLOYEES.....24,978
JOB OPENINGS.....1,200

HERE'S A DEAL you can't refuse: Combine cash bonuses, abundant prizes, and employee recognition with serious philanthropy. More than 8,500 CarMax employees have volunteered with KaBOOM! to build 66 playgrounds and donate 59 play products in underserved areas in over 80 cities. Meanwhile, CarMax has given KaBOOM! \$4.1 million and pledged \$4.4 million.

35
SOUTHERN OHIO MEDICAL CENTER

HQ.....Portsmouth, Ohio
EMPLOYEES.....2,938
JOB OPENINGS.....119

LIFETIME learning is more than a buzzword at this Portsmouth, Ohio-based medical center: SOMC spent \$635,000 last year on educational assistance for its employees and their dependents (that's right, spouses and children can also receive tuition help). Staffers are recognized at an annual Employee Service Awards Banquet (a.k.a. "prom").

• THE 100 BEST COMPANIES TO WORK FOR •

36
KPMG

HQ New York City
EMPLOYEES 32,718
JOB OPENINGS 2,031

KPMG KNOWS that even if accounting is your life's work, you have a life outside of work. "I'm able to take care of my elderly mom and situations that happen with my daughter, and I still get my work done without the stress," said an employee. "This is one of the many reasons I have been here for 20 years." Mentorship and development are also given high priority.

38
NVIDIA

HQ Santa Clara, Calif.
EMPLOYEES 7,203
JOB OPENINGS 1,031

"WORKING AT Nvidia is like experiencing the future today," says one employee of this A.I. company. Whether they're working on gaming or autonomous cars, Nvidia staffers are "encouraged" to risk failure in the pursuit of innovative solutions. Other perks: a free shuttle with Wi-Fi, tuition reimbursement, and a generous student loan repayment [\$6,000 per year].

40
BAPTIST HEALTH
SOUTH FLORIDA

HQ Coral Gables, Fla.
EMPLOYEES 17,915
JOB OPENINGS 5,896

WE'RE HERE to help. That's the message at Baptist Health, where employees trying to become citizens have access to free legal help, advice from immigration experts, and even no-interest loan options to help defray application fees. Tuition reimbursement and medical insurance discounts are two other big perks at Baptist, where 77% of workers are minorities.

41
DAVID WEEKLEY
HOMES

HQ Houston
EMPLOYEES 1,649
JOB OPENINGS 99

DAVID WEEKLEY Homes is dedicated to "doing the right thing," say staffers. The family-owned construction company promotes philanthropy with its CARE Committees that establish year-round volunteerism. After two years, each employee becomes an owner. In 2017, the whole company [and plus-ones] went to Maui for delivering on the firm's 2016 goals.

42
DROPBOX

HQ San Francisco
EMPLOYEES N.A.
JOB OPENINGS N.A.

THAT'S PRIDE! At this file-sharing trailblazer, Pride Month is celebrated companywide. Last year, Dropboxers, as they're called, were moved by coworkers who shared "powerful" stories. The tone is set from the top: CFO Ajay Vashee began the practice of including personal pronouns in his email signature so that all staffers would feel "safe" to "share their identity."

37

BAYCARE HEALTH
SYSTEM

HQ Clearwater, Fla.
EMPLOYEES 24,767
JOB OPENINGS 2,008

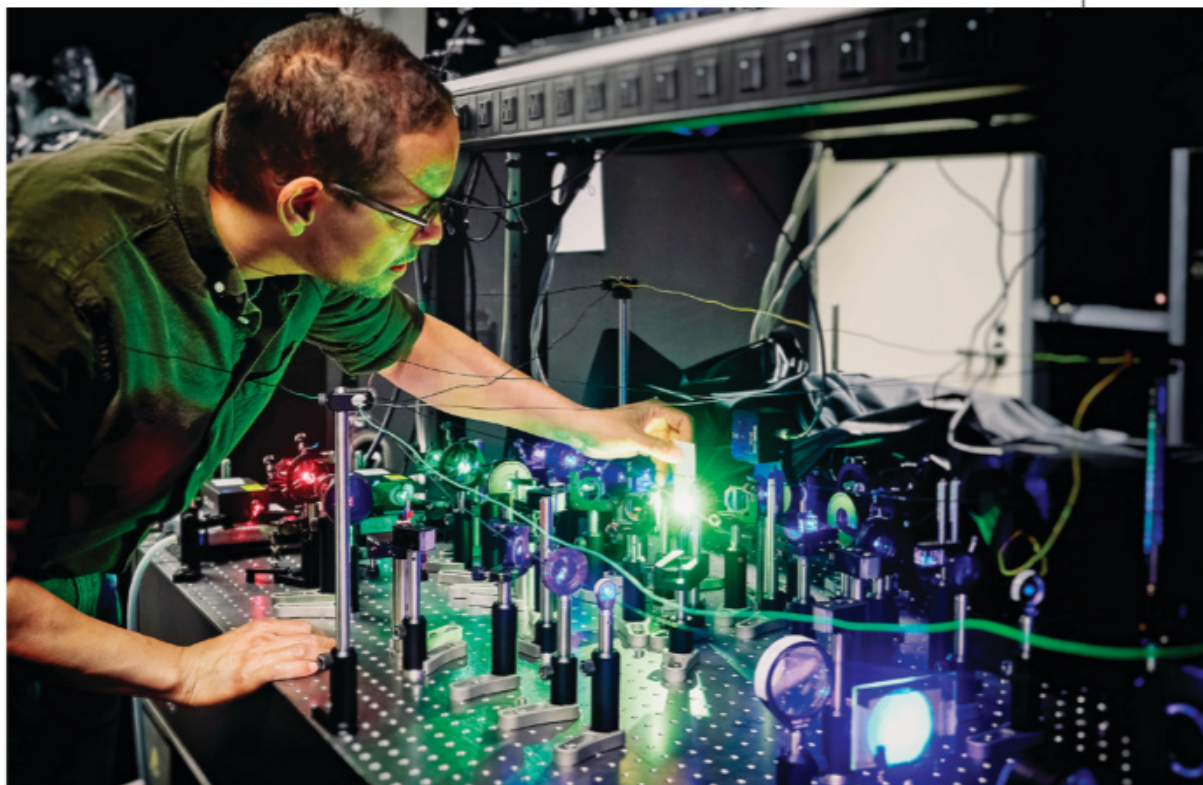
JUST AS IN the movie *Freaky Friday*, BayCare hosts Doctors for a Day, where pediatric patients switch roles with their doctors and caretakers. A pet-therapy program, Caring Paws, provides a "therapeutic environment" for staff, patients, and families. There's "confidence" in the nonprofit, staff say, and leadership that demonstrates openness to suggestions.

39

CAPITAL ONE
FINANCIAL

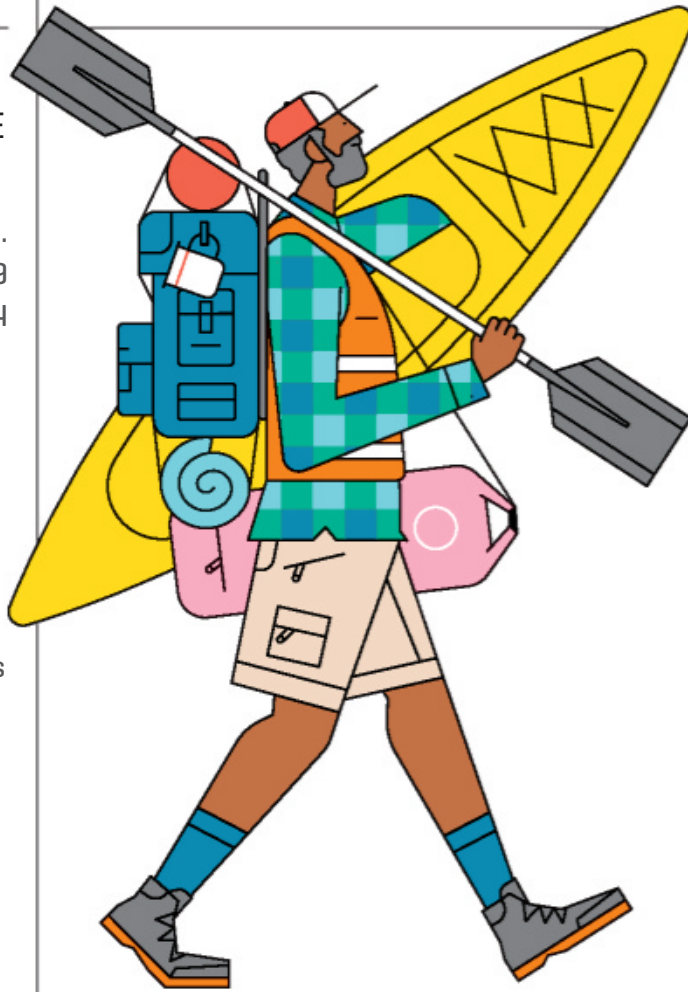
HQ McLean, Va.
EMPLOYEES 42,685
JOB OPENINGS N.A.

WHAT'S IN their wallet? Cash! Full- and part-time associates can request reimbursements of up to \$5,250 for college courses, books, and other educational expenses. Culturally, "this is not your traditional, stuffy bank," as one employee put it. There's "freedom to showcase your talents," say staff, and they're encouraged to develop skills through training and online learning.



They're glowing! Employees at Nvidia relish that they're encouraged to take risks in pursuit of innovative A.I.-powered inventions.

• THE 100 BEST COMPANIES TO WORK FOR •



← AT REI, EMPLOYEES ARE URGED TO HEAR THE CALL OF THE WILD.

43
ALLIANZ LIFE INSURANCE CO. OF NORTH AMERICA
 HQ ... Golden Valley, Minn.
EMPLOYEES1,989
JOB OPENINGS104

WHY WOULD YOU ever leave? Allianz boasts an on-campus store, farm share, childhood-development center, 9,000-square-foot fitness center, and free medical review services that are available to spouses, dependents, even parents and in-laws. Women make up 50% of the staff here, and all employees can take advantage of telecommuting and compressed workweeks.

44
PRICEWATERHOUSE-COOPERS
 HQ New York City
EMPLOYEES45,214
JOB OPENINGS8,598

PURSUING happiness? Then consider PwC, where a companywide *Pursuit of Happiness* podcast sheds light on decisions employees have made as they seek the life they want. A focus on e-learning, autonomy, plus the ability to “design a career path” around “interests, goals, and personal situations” help employees feel as if they are moving in the right direction.

45
 ★ **GENENTECH**
 HQ South San Francisco
EMPLOYEES13,697
JOB OPENINGS3,818

THIS BIOTECH company’s inclusive culture is like a “sanctuary,” raves one employee. One division boasts a development program to foster minority representation in upper management, and overall, Genentech “focuses on its people.” Staffers are encouraged to offer suggestions via surveys to management about how to improve. And, according to most, management listens.

46
 ★ **REI**
 HQ Kent, Wash.
EMPLOYEES12,925
JOB OPENINGS4,368

GET OUTSIDE! That’s the message to customers and employees at REI. Staffers can vie for \$300 “adventure grants” to help fund ambitious outdoor vacations where they can “recharge.” Employees take pride in the fact that the Washington-based co-op is committed to “rewilding” large metropolitan areas by developing more accessible green spaces across the nation.

HOW WE...
HELP EVERYONE JUST CHILL OUT

ANXIETY MAY be a fact of life for most lawyers, but law firm Orrick (No. 15) is trying to help employees relax. Its NYC office features three meditation rooms, where weekly sessions are live-streamed across the U.S. In 2018, one-fifth of the firm participated in a new series of mindfulness workshops; the one on “Worry” attracted a standing-room-only crowd.

The weekly 15-minute meditation sessions, in particular, have struck a chord with everyone from chairman and CEO Mitch Zuklie on down. “There’s something about gathering once a week in the meditation workshops that connects us as humans, regardless of our role at the firm or what we have going on that particular day,” says Zuklie. “Clearing my mind has given me new perspective on facts I’m digesting for trial,” says one employee. “I have noticed a significant shift in my stress level and my productivity.” Chief talent officer Siobhan Handley says she’s gotten feedback from associates that it’s “the single most useful piece of training they’ve gotten.” Not bad for .25 billable hours! —K.F.

47
PROTIVITI
 HQ Menlo Park, Calif.
EMPLOYEES2,716
JOB OPENINGS675

THE SILICON VALLEY consulting firm lives by its “Promises to Our People.” Leaders make “acts of service” a normal part of the work-week, and most leadership meetings integrate a team-based service activity. The company donates \$15 for every hour volunteered by an employee. The Robert Half subsidiary invests heavily in its people: Employees get 110 hours of training a year.

48
SLALOM
 HQ Seattle
EMPLOYEES5,536
JOB OPENINGS1,763

TRANSPARENCY is fundamental at this consultancy: At monthly State of the Office meetings, managers answer questions on the spot via “Ask Me Anything” or “Elephant in the Room.” Informal meals and fireside chats give employees the chance to interact with higher-ups. And there’s no executive suite here: Senior leadership sits in an open workspace called “the pit.”

• THE 100 BEST COMPANIES TO WORK FOR •

49
T-MOBILE US

HQ Bellevue, Wash.
EMPLOYEES 52,218
JOB OPENINGS 1,516

HE GETS AROUND! CEO John Legere (who has made Glassdoor’s annual list of Highest Rated U.S. CEOs for the past two years) visits every call center at least once a year. (He’s even said, “Listen to your employees, listen to your customers, shut the f--- up, and do what they tell you!”) One staffer writes: I appreciate that he “could *not* appear in an episode of *Undercover Boss!*”

AT RYAN, WORK/LIFE EQUILIBRIUM IS WITHIN REACH. ↘



50
RED HAT

HQ Raleigh, N.C.
EMPLOYEES 5,400
JOB OPENINGS 875

IT’S NO SURPRISE that this maker of open-source software adopts a similar approach to its culture. Aside from “being able to wear jeans” (which employees do every day) and being gifted a red fedora upon employment, Red Hat employees revel in what one staffer calls “an open meritocracy,” where growth is encouraged “For All, by All.”

51
SYNCHRONY

HQ Stamford, Conn.
EMPLOYEES N.A.
JOB OPENINGS 330

WHEN CEO Margaret Keane discovered her associates at this financial services provider (formerly part of GE) felt they had little power to effect change, she started the Empowerment Station—a cross-functional team of associates working together to identify opportunities for change. Employees are chosen for these temporary roles, which can provide valuable business skills.

52
RYAN

HQ Dallas
EMPLOYEES 1,670
JOB OPENINGS 95

TAXES = STRESS, but this business tax firm is trying to change that. Through the myRyan program, employees are encouraged to change their schedule as needed to achieve a sense of work/life equilibrium. Based on a core principle of “focus on results, not hours,” myRyan allows employees to work on their own terms: at a desk, at home, or even at the gym.

THE “BIG SEVEN”:
**FORTUNE’S
BEST BIG
COMPANIES TO
WORK FOR**

FOR A CORPORATE leader trying to build a satisfied, innovative workforce, size can be a frenemy. Yes, a big company may boast the name recognition, market clout, and stability to attract top talent. But the challenges of recruiting and developing managers, communicating across the organization, and making employees feel valued all grow as the staff ranks swell. The upshot: Companies with 100,000 employees or more are only half as likely as smaller peers to be voted a Great Place to Work for All.

With that in mind, we’re saluting companies that cleared both the Great Places certification bar and the 100,000-employee mark (listed here with their number of U.S. employees).
—Matt Heimer

1. **PUBLIX SUPER MARKETS**
200,000
2. **MARRIOTT INTL.**
133,238
3. **COMCAST NBCUNIVERSAL**
184,000*
4. **BANK OF AMERICA**
169,708
5. **FEDEX**
296,474
6. **AT&T**
209,620
7. **KAISER PERMANENTE**
202,768

53
★ ALSTON & BIRD

HQ Atlanta
EMPLOYEES 1,635
JOB OPENINGS 92

WE’VE GOT YOUR back. “Caring for employees in all life’s situations” is the mantra here, and staffers appreciate the cornucopia of programs designed to help busy lives run a little smoother. Those include a full-service childcare program on the firm’s Atlanta campus, concierge breast milk shipping for nursing moms, errand-running, and even backup eldercare.

54
ENCOMPASS HEALTH
HOME HEALTH & HOSPICE

HQ Dallas
EMPLOYEES 10,637
JOB OPENINGS 1,414

IT TAKES a special type of person to spend his or her days caring for the sick and dying, and Encompass Health takes pride in attracting those people. Giving back is important here: In 2017, the company foundation gave \$53.5 million to charity including to patients in need. Staffers say senior executives get to know employees, such as the CEO who makes a point of learning names.



**PERHAPS IT'S
NO SURPRISE**

**THAT A FIRM BUILT ON
INSIGHT,
COLLABORATION
AND LISTENING**

**HAS BEEN NAMED
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FOR WOMEN IN
FINANCIAL SERVICES.**

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**RANKED #1 WORKPLACE FOR WOMEN IN
FINANCIAL SERVICES BY FORTUNE MAGAZINE**

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Diana Gokool Diaz, CFP®
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• THE 100 BEST COMPANIES TO WORK FOR •

55

AMERICAN FIDELITY ASSURANCE

HQ Oklahoma City
EMPLOYEES 1,841
JOB OPENINGS 70

LITTLE PERKS are a big deal at this benefits provider. Even before day one, new hires are showered with fresh-baked cookies and swag. On the job, employees enjoy lunches with senior management, a 10,000-square-foot fitness center, and regular chances to win prizes. Relocation services, telecommuting, and flex schedules also make this a popular workplace for parents.

57

NATIONWIDE

HQ Columbus
EMPLOYEES 30,497
JOB OPENINGS 730

THE VENERABLE insurer's culture is about much more than humming the famous "On Your Side" jingle. Nationwide spends over \$90 million annually on staff development, offering more than 1,700 courses for employees. Workers gush about the mentoring and are seriously proud of the 94-year-old company's history: Trained archivists conduct guided tours of its headquarters.

58

ST. JUDE CHILDREN'S RESEARCH HOSPITAL

HQ Memphis
EMPLOYEES 4,483
JOB OPENINGS 135

PERKS LIKE free scientific lectures and bicycles on campus are nice. But the main draw here is the incredible sense of mission. A common refrain among staffers is how they feel fortunate and proud to be working every day to treat and cure pediatric cancer and other diseases. This culminates with an annual Survivors Day, when patients reconnect with their caregivers.

59

CREDIT ACCEPTANCE

HQ Southfield, Mich.
EMPLOYEES 2,119
JOB OPENINGS 113

RECOGNITION is a huge deal at this auto-financing company; workers rave about the awards and cash prizes. The firm has a "listening culture" and acknowledges hard work and good deeds. The hiring process here focuses on personality and aptitude. It doesn't hurt that 42% of new hires come from referrals, and an additional 23% are filled by internal promotions.

60

★ SAS INSTITUTE

HQ Cary, N.C.
EMPLOYEES 6,925
JOB OPENINGS 574

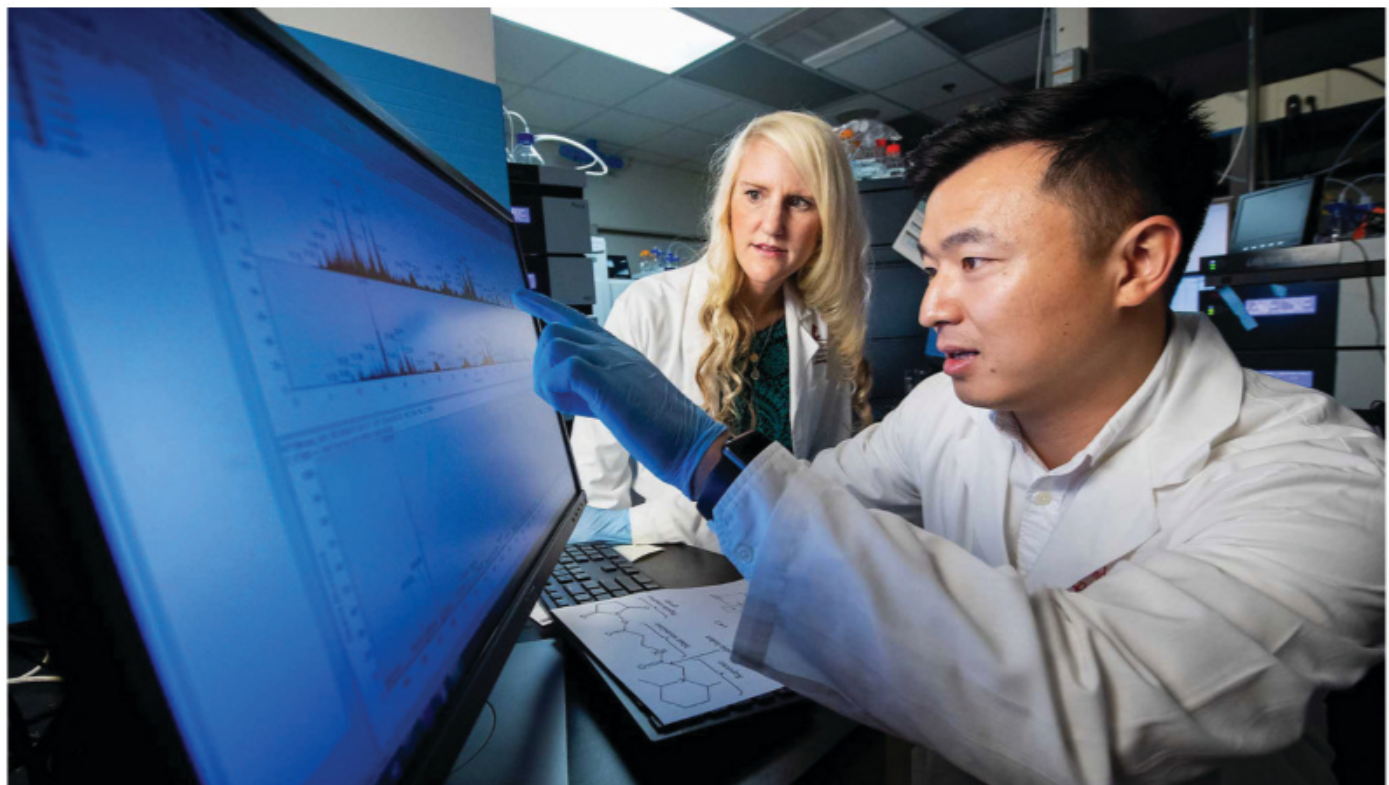
SAS IS THE rare privately held but mature software company. Located far from Silicon Valley, SAS employees embrace the company's "no coffee gopher" culture: Students and young professionals work on substantive problems. SAS also hosts public safety summits at which community members and law enforcement discuss health and safety challenges.

56

WORLD WIDE TECHNOLOGY

HQ St. Louis
EMPLOYEES 4,673
JOB OPENINGS 175

THE "BRILLIANT MINDS" at this tech consultancy make it a nerd's paradise. Its popular Innovation Games competition has categories like Just Plain Geeking Out and Build Cool Things. An on-site counseling program was piloted this fall: "I have wandered so far outside the box that I couldn't see land," said one employee. But bosses offered "praise and assistance."



At St. Jude, researchers seek out vulnerabilities to target in a high-risk type of pediatric tumor. Employees say they love the benefits, but what really drives them is the incredible sense of mission.

● COURTESY OF ST. JUDE CHILDREN'S RESEARCH HOSPITAL



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“Crowe emphasizes **doing the right thing** for clients, the firm, and employees.”

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“The most **awesome** work-life balance!”

“It feels **amazing** to work for a company that supports my **volunteer efforts.**”

“Crowe has demonstrated time and time again that they **trust their people.**”



Audit / Tax / Advisory / Risk / Performance

• THE 100 BEST COMPANIES TO WORK FOR •

61
ACCENTURE

HQ..... New York City
EMPLOYEES 49,901
JOB OPENINGS 2,969

THIS “MOTIVATED” group thrives on collaboration via tons of tech tools such as virtual whiteboards, Circles discussion platforms, and high-tech videoconferencing. The Stop Start program encourages staff to share stories of personal change. Accenture is committed to a 40% female workforce and the hiring of 5,000 U.S. military vets and spouses by 2020.

63
ABBVIE

HQ.... North Chicago, Ill.
EMPLOYEES 13,642
JOB OPENINGS 1,569

THE PHARMA and biotech firm uses a mentoring program dubbed Power of Differences that connects mentees with multiple coworkers and one another. AbbVie is also expanding its phased retirement program, helping employees 55 and older with at least 10 years of service to wind down their careers by reducing their schedules, workloads, or responsibilities.

64
HUBSPOT

HQ.... Cambridge, Mass.
EMPLOYEES 1,835
JOB OPENINGS 200

THEY HAVE a beer garden. Need we say more? This e-commerce software provider offers classes on subjects from programming to croissant baking. HubSpot also has its own mobile-ready video library of educational and skills-focused clips. Along with free food, HubSpot provides flexible hours with unlimited vacation and sick days (for part-timers too).

65
OLIVER WYMAN GROUP

HQ..... New York City
EMPLOYEES 1,231
JOB OPENINGS N.A.

PAID TIME OFF to volunteer and three-to-six month nonprofit fellowships to help a charity of your choice are just two ways this consulting firm gives back. A new full-time four-person team is tasked with improving inclusion and diversity. Says one employee of the culture: “As a member of the LGBT community, I feel as though I am able to truly be myself at work.”

67
CHG HEALTHCARE

HQ..... Midvale, Utah
EMPLOYEES 2,855
JOB OPENINGS 200

THE STAFFING firm placed more than 14,000 health care workers in positions last year that served almost 27 million patients. Top employees’ volunteer efforts are recognized with “difference maker” awards that can result in all-expenses-paid humanitarian trips worldwide. In August, six winners traveled to Kenya for 10 days to help build two schools.

62
★ GOLDMAN SACHS

HQ..... New York City
EMPLOYEES 19,422
JOB OPENINGS 280

THINKING BEYOND the bottom line: Goldman Sachs Person by Person exposes all new hires, associates, and VPs to issues of diversity, communication, and relationships. And feel-good initiatives—such as 10,000 Small Businesses, which has committed \$192 million in capital to 30 U.S. partners—give staffers a sense of purpose.



→ AT BRIGHT HORIZONS, STAFF GET SCHOOLED IN EARLY CHILDHOOD ED.

66
BRIGHT HORIZONS FAMILY SOLUTIONS

HQ.... Watertown, Mass.
EMPLOYEES 21,064
JOB OPENINGS 9,613

THE DAY-CARE and pre-school company that runs 741 different locations is encouraging employees to go higher: If you get an associate’s or bachelor’s degree in early childhood education, the company will cover all expenses upfront and increase your salary by 5% upon completion. No wonder rehires are now its No. 3 source for hiring, and turnover is half the industry average.

68
CROWE

HQ..... Chicago
EMPLOYEES 3,900
JOB OPENINGS 58

ACCOUNTING and consulting firm Crowe created an innovation “fast track” program to help employees develop and hone innovative ideas. Participants can get funding, coaching, design, and tech support. Volunteering is also a major focus. When execs challenged employees to hit 75,000 hours of volunteer time in 2017, they surpassed the goal and reached 85,000 hours.

BEING A TOP WORKPLACE COMES WITH CERTAIN RESPONSIBILITIES. AND THAT INCLUDES PROVIDING EXTRAORDINARY CARE.

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And apparently it shows.**

The road to being a Top Workplace began when BayCare was formed in July 1997. Many of the leading not-for-profit hospitals in the Tampa Bay region of Florida wanted to work together to ensure that community-based, not-for-profit health care would not only survive, but thrive, into the future.

At BayCare, our “true north” is clinical excellence. Combined with our mission, vision and values, that’s the shared purpose of our extraordinary team members, physicians and volunteers. And we take pride in working together to achieve clinical excellence every day.

As a community-owned health system, we’re responsible for providing health care with a heart—compassionate, high-quality care, and a commitment to our friends, neighbors and loved ones to continue the health care excellence that’s lasted over 20 years.



“When team members and physicians are proud to be part of this organization and are completely engaged in what we’re trying to do, there’s nothing we can’t accomplish together.”

~ Tommy Inzina, *President/CEO*
BayCare Health System



HUMANITY AT WORK™

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BAYCARE.ORG



House proud: At Seattle-based Zillow, there's a premium on attracting and keeping staff from diverse backgrounds. Need to reach the CEO? He has a dedicated Slack channel for employees.

73
CADENCE

HQ..... San Jose
EMPLOYEES 3,083
JOB OPENINGS 200

EMPLOYEES love working on the cutting edge at this electronics software design firm. Cadence spells out clear expectations for advancement. It offers mentorship programs for new employees and women, online assessment tools, and 360-degree reviews. Workers rave about the company's Volunteer Time Off program, which gives five paid business days to serve.



69
ZILLOW GROUP

HQ..... Seattle
EMPLOYEES 4,064
JOB OPENINGS 328

THIS "PORTFOLIO" of real estate brands values diverse voices: It runs job descriptions through a platform to screen for off-putting language, trains interviewers to recognize and avoid unconscious bias, and creates job interview panels that reflect the diversity of the community. The CEO maintains a dedicated Slack channel for communicating with employees.

70
ATLASSIAN

HQ..... San Francisco
EMPLOYEES 1,500
JOB OPENINGS 277

COLLABORATION software developer Atlassian takes openness with employees to new heights. In addition to weekly live-streamed town meetings, the company publishes its strategy internally so any employee can comment, ask questions, or make suggestions. Corporate-speak is discouraged, with company slogans including "No BS" and "Don't #@!% the customer."

71
COMCAST
NBCUNIVERSAL

HQ..... Philadelphia
EMPLOYEES 184,000*
JOB OPENINGS... 20,771*

THE CABLE and entertainment giant set out in 2015 to hire at least 10,000 veterans, National Guard members, reservists, and military spouses, and it exceeded that goal by the end of 2017. For employees who serve in the National Guard and Reserve, the company offers expanded benefits, such as supplemental pay and paid military leave, as well as concierge services.

72
HYLAND

HQ..... Westlake, Ohio
EMPLOYEES 2,913
JOB OPENINGS 602

EVERY WEEK at the content management software provider starts with bagels and a Monday morning meeting led by CEO Bill Priemer where one employee is singled out as "player of the week." The award comes with prizes such as cash and extra paid time off. Employees get a four-week sabbatical after eight years and a cash bonus of \$2,500 plus lunch with the CEO after a decade.

74
PERKINS COIE

HQ..... Seattle
EMPLOYEES 2,408
JOB OPENINGS 112

IT'S PRESTIGIOUS to work at this century-old law firm whose clients include Amazon and Google (and whose alums often go on to elite government roles). Of note is its elaborate committee-driven style: "Decision-making can be slow, but it is deliberative, inclusive, and fair," says one insider. Employees laud its social justice-oriented pro bono work.

COURTESY OF ZILLOW GROUP

* GLOBAL FIGURE

Moved By Employees

TQL's workplace culture has made it the logistics industry leader.

“We attract people who enjoy healthy competition and pushing their own boundaries.”

KERRY BYRNE
President
Total Quality
Logistics



THE SECOND-LARGEST FREIGHT BROKERAGE

in America came from humble beginnings: a two-man operation started 22 years ago. Today, Total Quality Logistics, or TQL, is a classic American success story with over \$3 billion in sales annually and more than 5,500 employees.

How did TQL rise to prominence in a fiercely competitive industry? President Kerry Byrne credits organic and employee-driven growth. “No mergers. No acquisitions,” he says. “We have done it through hard work and by empowering our employees to have a true stake in our growth; everything from deciding where and when we open satellite offices to launching new modes of service coverage.”

The Cincinnati-based firm solves transportation problems for companies with goods to ship, leveraging a network of more than 75,000 carriers to find optimal routes and modes for each job, whether that involves trucking, rail or both, or even ocean and air. Employees make it happen at 57 locations in 26 states, motivated by their own success. In every department, workers with an aptitude for growth are groomed for increased responsibility, including leadership

opportunities.

“We really couldn’t be an entrepreneurial company if we confined people to one role with a limited path forward, and it shows,” Byrne says. “More than 90% of our management team has been promoted from within.” TQL’s Leadership Development Program ensures that team members with promise and passion are properly equipped for the next level. Managers work with trainers and mentors to learn essential skills, such as conflict resolution. And they learn about themselves, too, honing management styles consistent with their personalities.

At a time when the supply chain sector seeks to recruit and retain more women, TQL has a system in place for doing both. Every

TQL site hosts a chapter of Women in Logistics, an employee resource group that facilitates networking, professional development and community involvement among women.

TQL wins accolades for creating a meaningful place to work even outside the office. From intramural sports teams to charitable giving programs and enrichment opportunities for children of employees, TQL fosters an

atmosphere in which relationships and personal growth are nurtured along with profits.

“We attract people who enjoy healthy competition and pushing their own boundaries,” Byrne says. “Then back them up with everything they need to succeed.” ●





Physician-scientists helm this fast-growing biotech.

75 REGENERON PHARMACEUTICALS

HQ: Tarrytown, N.Y. • EMPLOYEES: 6,500 • JOB OPENINGS: 350

THIS HIGHLY PRODUCTIVE, fast-growing biotech is led by physician-scientists (not businesspeople), and its employees are inspired by a sense of “endless possibilities.” Those vast opportunities are professional as well as scientific. The drugmaker has created a path for research associates to work their way up to the rank of scientist—rather than having to slave away for a Ph.D.—and it encourages collaboration across the company through popular “lab warmings,” firm-wide networking events where teams showcase their work.

76

PROGRESSIVE

HQ Mayfield Village, Ohio
EMPLOYEES 35,833
JOB OPENINGS 598

IT'S THE CULTURE that has enabled this insurer to “jump out in front of the industry,” says one employee. Activities like Code Jams and problem-tackling workshops called Action Factories help employees stay agile. Career-path planning is made a priority for all via an abundance of resources from online self-paced tools to departmental training programs.

77

POWER HOME REMODELING

HQ..... Chester, Pa.
EMPLOYEES 2,461
JOB OPENINGS 282

KNOW SOMEONE who would like to work here? Employee referrers get a \$2,000 bonus (\$3,000 for finding candidates who are women). But be warned: Disposition trumps résumés (most wanted: an aptitude for positive thinking). That makes for a motivated, “family” culture. Another enviable perk: All staffers (plus one) are invited on a company-wide trip to Mexico.

78

KRONOS

HQ..... Lowell, Mass.
EMPLOYEES 3,756
JOB OPENINGS 474

WITH HEADQUARTERS featuring both a smoothie station and a latte-making barista as well as indoor and outdoor gaming and sports facilities, this workforce management software company makes work/life balance such a “defining aspect” of its culture that “it doesn’t feel like a job,” according to employees. So-called Kronites also get unlimited paid days off.

79

CHILDREN'S HEALTHCARE OF ATLANTA

HQ..... Atlanta
EMPLOYEES 11,100
JOB OPENINGS 460

CARING FOR sick kids is a particularly tough job, but regular on-site carnivals for patients—where staff members host dunking booths, pie-throwing contests, and karaoke—as well as 100-employee yoga retreats, ensure the “overall culture is one of happiness.” Workers receive childcare subsidies and potential tuition reimbursement for education opportunities.



Toni Reid
Vice President, Alexa
Experience and Echo
Devices, Amazon

Thasunda Brown Duckett
Chief Executive Officer, Consumer
Banking, JPMorgan Chase & Co.

Shan-Lyn Ma
Co-founder and CEO, Zola

Emily Weiss
Founder and CEO, Glossier



THE 2018 FORTUNE MPW NEXT GEN SUMMIT convened a stellar group of game-changing executives, entrepreneurs, and innovators in business, along with leaders in government, philanthropy, education, and the arts. Thank you to the participants, speakers, and sponsors who made this event such a tremendous success. The 2019 Summit will be held in Laguna Niguel December 10-11.

For more information:
FortuneMPWNextGen.com

Photos: @Stuart Isett/Fortune Most Powerful Women Next Gen



Stacey Abrams
Founder and Chair,
Fair Fight

Maha Ibrahim, General Partner, Canaan Partners; Beth Ferreira, General Partner, FirstMark Capital;
Connie Chan, General Partner, Andreessen Horowitz

Kat Cole
President and COO, North
America, FOCUS Brands

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• THE 100 BEST COMPANIES TO WORK FOR •

HOW WE ...
ARE COMBATING THE STUDENT LOAN CRISIS

IT'S PRETTY hard to focus on inventing far-out artificial intelligence products when you're stressed about paying off student loans racked up when you were living on Cheetos and Mountain Dew. So Nvidia [No. 38] decided to help its employees who are drowning in debt. For the past two years, it has been offering full- and part-timers assistance through a program administered by loan servicer EdAssist. Staff who have been with Nvidia for over three months can apply for reimbursements of up to \$6,000 a year, or \$30,000 total. So far, the company has reimbursed more than \$500,000.

As VP of employee experience Beau Davidson puts it, taking away some of the worry about finances means "employees can do their life's best work."

Mathias Caetano, a graphic designer who has been with Nvidia for over five years, did the math and thinks he'll be able to cut down his original repayment timeline by between a half and two-thirds. Even for an A.I. company, that's pretty far out. —TAMARA EL-WAYLLY

80
WORKIVA

HQ..... Ames, Iowa
EMPLOYEES 1,225
JOB OPENINGS 113

EMPLOYEES refer almost a third of new hires—and win cash prizes in return—so it's no wonder they feel "at home" here. Many get started at the enterprise software company as part of its 90-person intern class but stay for the virtually free health insurance and frequent face time with managers and executives [a staff group liaises with HR brass to elevate suggestions].

81
NUGGET MARKET

HQ..... Woodland, Calif.
EMPLOYEES 1,937
JOB OPENINGS 42

A 10% STORE discount and 100% complimentary health insurance are just the start at this family-owned grocery chain, which has never made layoffs in its 93-year history. Last year, the company spent \$1.4 million on employee development, including pasta-making and wine-pairing classes. CEO Eric Stille annually offers \$1,000 to employees who quit smoking for a full year.

82
BURNS & MCDONNELL

HQ..... Kansas City
EMPLOYEES 6,072
JOB OPENINGS 978

HAVE KIDS? Then you'll love the setup at this engineering firm, which features the MacKids Learning Academy: It's an on-site, STEM-based education program for children as young as 6 weeks old up to pre-K. Beyond that, perks include fitness and health centers, childcare, classes, and even a credit union [plus discounted gym memberships for those who work out off-site].

84
TOTAL QUALITY LOGISTICS

HQ..... Cincinnati
EMPLOYEES 5,889
JOB OPENINGS 100

LOGISTICALLY speaking, it's easier to have corn-hole and Ping-Pong on-site. At least that's the vibe here, where the HQ also features a gym and an outdoor running track. The logistics company offers plenty of opportunities to relax with patio parties, holiday celebrations, and other events. Total Quality also pays an average \$4,144 in tuition reimbursement per employee every year.



83
FIRST AMERICAN FINANCIAL CORP.

HQ..... Santa Ana
EMPLOYEES 12,353
JOB OPENINGS 346

WOMEN RULE at First Financial American Corp., which has one of the highest percentages of female employees on the list at 68%. A rewards program allows managers to gift employees points worth \$1 each, which can be spent on specific items. First Financial also offers a discount stock purchase plan, up to \$10,000 in financial assistance for adoptions, and pet insurance.

85
SHEETZ

HQ..... Altoona, Pa.
EMPLOYEES 18,900
JOB OPENINGS 2,452

THERE'S REASON to smile at this chain of innovative convenience stores: The company's hourly wages are in the 90th percentile among competitors, it matches 401(k) contributions up to 4%, and dental expenses are 100% covered up to \$2,000 per year [that helps with smiles]. Workers appreciate a tech platform that lets them share suggestions and ideas.

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- Why selecting a benchmark, something few people do, can help you maintain and grow your portfolio over time in bull and bear markets. (Tip #19)
- Why paying down your mortgage before you retire might not be a good idea. (Tip #26)
- How to estimate what your taxes are going to be and look for ways to reduce them in retirement. (Tip #40)
- Why, if you are close to retirement or already retired, you'll probably live longer than you think. (Tip #12)
- How not to get caught in the inflation trap and the fallacy of most asset-allocation advice. (Tip #13)
- What you should tell your adult children about your finances. (Tip #23)

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86

CUSTOM INK

HQ..... Fairfax, Va.
EMPLOYEES 1,619
JOB OPENINGS 111

"INKERS," as they're called, live by the values of the golden rule, ownership, and innovation. Of note: Custom Ink has the highest percentage of full-time employees among all the retailers on our list this year.

89

★ FOUR SEASONS
HOTELS & RESORTS

HQ..... Toronto
EMPLOYEES 14,217
JOB OPENINGS 4,257

HUNGRY? Four Seasons offers free lunches and snacks to its workers, including healthy food options. Employees also get the chance to check in for five free nights at any location every year.

92

BANK OF AMERICA

HQ..... Charlotte, N.C.
EMPLOYEES 169,708
JOB OPENINGS 7,500

THE LARGEST company on the list by revenue, this banking giant still manages to foster a sense of camaraderie. Eligible parents may also receive childcare reimbursements of up to \$240 a month.

95

FEDEX

HQ..... Memphis
EMPLOYEES 296,474
JOB OPENINGS N.A.

THE LOGISTICS giant delivers for its workforce: a recent \$200 million bump in employee compensation, with two-thirds going to hourly workers. Said one, this is a "rewarding lifelong career."

98

MARS

HQ..... McLean, Va.
EMPLOYEES 14,363
JOB OPENINGS 1,244

THEY "INVEST in the long term," notes one employee at this candy paradise. Workers point proudly to the \$1 billion commitment to streamline the supply chain in order to reduce greenhouse gases.

87

ATLANTIC HEALTH
SYSTEM

HQ..... Morristown, N.J.
EMPLOYEES 12,864
JOB OPENINGS 830

TUITION reimbursement and 29 days of paid time off, plus coworkers that "give 110%," are just a few reasons this health care company boasts one of the lowest turnover rates on the list.

90

NOVO NORDISK

HQ..... Plainsboro, N.J.
EMPLOYEES 4,526
JOB OPENINGS 1,175

MEETINGS can be a drag—so for some at this pharma company, they are discouraged after 1 p.m. A subsidized concierge service and an 8% to 9% 401(k) company contribution are two big perks.

93

BOX

HQ.. Redwood City, Calif.
EMPLOYEES 1,680
JOB OPENINGS 800

BIG MONEY: This tech firm pays the highest salary on the list to its largest group of employees [\$192,284 for senior software engineers]. Other highlights: "attentive" bosses and a fun HQ.

96

ACTIVISION BLIZZARD

HQ..... Santa Monica
EMPLOYEES 5,699
JOB OPENINGS 367

MAKING GAMES can be grueling, but here, physical and mental well-being are emphasized. That means flexible work schedules [presumably enough time off to play *Call of Duty* with your kids].

99

OHIOHEALTH

HQ..... Columbus
EMPLOYEES 26,956
JOB OPENINGS 1,634

THIS FAITH-affiliated, nonprofit health care firm is known for its generous benefits and support. Employees now get up to 10 days of paid leave for the loss of a spouse, domestic partner, or child.

88

METHODIST LE
BONHEUR HEALTHCARE

HQ..... Memphis
EMPLOYEES 11,245
JOB OPENINGS 1,183

GOT DEBT? This company repays up to \$25,000 of student loans per employee. That's one reason turnover here is lower than average for the field. And 53% of jobs are filled by existing staff.

91

FARMERS INSURANCE

HQ Woodland Hills, Calif.
EMPLOYEES 20,111
JOB OPENINGS 652

MISS COLLEGE? This insurer created an in-house university, complete with campuses, classrooms, and virtual reality, to train employees in a range of skills from leadership to claims evaluation.

94

ALLIANCE DATA
SYSTEMS

HQ..... Plano, Texas
EMPLOYEES 15,500
JOB OPENINGS 316

THE PERKS ARE plentiful at this marketing services company: on-site fitness, mental health support, dry-cleaning, and car-washing, plus for eligible employees, a one-month sabbatical after 10 years.

97

DELTA
AIR LINES

HQ..... Atlanta
EMPLOYEES 84,787
JOB OPENINGS 193

NOT MANY employees want to "check out" at this airline: The company has a crazy-low 2% annual turnover rate. Unconscious-bias and diversity training help make everyone feel valued here.

100

PATAGONIA

HQ..... Ventura, Calif.
EMPLOYEES 1,547
JOB OPENINGS 169

A PIONEER in environmental stewardship, Patagonia encourages employees to protest and take political stands too. They come to work "with a sense of greater purpose and conviction," says one. ■

Creating a Culture Focused on Trust

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2019

BUSINESSES DON'T MAKE FORTUNE'S

list of the 100 Best Companies to Work For five years running by resting on their laurels, and no one knows this better than Protiviti. One way the global consulting firm has accomplished it is by offering its 6,000 professionals robust leadership-development opportunities that let them customize where they want to take their careers in the years ahead. And recently, the company—whose name blends the corporate values

of productivity, creativity, integrity, innovation, and inclusion—launched

Foundations, a unique, customizable, experience-based program to enhance new employees' capabilities as they deliver exceptional client service.

"It allows our people to gain experience in a wide variety of relevant solutions, including emerging technologies such as artificial intelligence and machine learning, early in their

careers that will enable them to be more well-rounded professionals and more adaptable to the future needs of our clients," says Cory Gunderson, executive vice president of global solutions at Protiviti. "We think the future is more about flexibility and providing next-gen, holistic solutions to client problems."

With a workforce composed of 80% millennials, Protiviti president and CEO Joseph Tarantino says an environment filled with challenges and opportunities to grow is a must. "Our employees find our environment exciting, fulfilling, and one where they can learn over the course of their careers and not get bored or stagnate," he says.

Protiviti also provides numerous attractive benefits, including sabbaticals, a global location-exchange program, and a community service initiative—in partnership with many of its clients—that has provided more than 7.5 million meals to help combat food

95% of customers would rate the service Protiviti delivers as "excellent"

insecurity worldwide. The result: 94% of employees say they feel good about the way they contribute to the community.

It all adds up to a culture that has earned a tremendous amount of trust with thousands of clients who call on Protiviti to help them manage risks in their industries. "Our mission is to become the most trusted consulting firm in the world," says Tarantino. "Many clients say, 'We can't tell the difference between a Protiviti employee and our own. How they can acclimate to our culture and all of your other clients is a pretty remarkable trait.'"

He adds: "We're never satisfied with where we're at. Being on the *Fortune* list with all of these great companies gives us the incentive to step up our game continuously." ■





Taking the Experience Up a Notch

As **SAP** revolutionizes the end-to-end journey for its customers, it keeps a focus on its employees and their journey, too.

“It’s about creating a holistic, well-rounded experience for our employees, where they feel valued, appreciated, and excited to go to work.”



DJ PAONI
President,
SAP North America

FOR ALMOST 50 YEARS, SOFTWARE GIANT SAP has been dedicated to improving the experience of its customers. It must be doing something right: Nearly all of the world’s 100 most valuable brands run their companies on SAP. And soon those companies will further benefit from SAP’s recent acquisition of Qualtrics, the pioneer in experience management software, which will enable SAP to provide companies with end-to-end insights on everything, including customer satisfaction.

But customers aren’t SAP’s only priority. The Germany-based company is deeply committed as well to its employ-

ees and their satisfaction. “It’s about creating a holistic, well-rounded experience for our employees, where they feel valued, appreciated, and excited to go to work,” says DJ Paoni, president of SAP North America, noting that such an approach is particularly important to Gen Xers and millennials. “It’s not just about collecting a paycheck. It’s about what experience can this organization provide me, both from a professional development perspective and a personal one.”

Here too, the company is obviously doing something right. Once again SAP has landed on the list of *Fortune*’s 100 Best Companies to Work For.

SAP offers great perks like leading maternity benefits, on-site gym classes, flexible work schedules, and generous vacation time and bonuses. It also gives employees an opportunity to affect social change by giving them sabbaticals to volunteer in their communities or overseas. The more intangible benefits are essential too, says Paoni. Employees are given challenges and encouraged to take risks and offer up ideas—and they are rewarded for doing so.

“These are all things that create an amazing experience and a bond between SAP and the employee,” Paoni says. That bond in turn fuels SAP’s dedication to serving its customers. “It’s about having a customer-first mentality in everything we do; ensuring our customers can create the best experience for their customers.”

“At the end of the day,” Paoni adds, “we all want to have a great experience. It’s what drives loyalty, both inside and outside every organization.” Clearly, it’s what drives SAP. ●

EMPLOYEES CELEBRATING ANOTHER SUCCESSFUL ANNUAL SAP KICKOFF MEETING



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IN BREXIT, COULD IRELAND WEAR THE CROWN?

As Britain stumbles through a Brexit mess, corporations are turning to Ireland—cool, confident, coherent—as the crown jewel of their European operations.

Is the grass really greener in Dublin? **Richard Morgan** travels across the Irish Sea to discover a nation coming to terms with a new international identity and its unexpected role as economic exploiter of goings-on in London.

(Rather than the other way around.)



IT WAS SUPPOSED TO BE A GOOD YEAR FOR TAOISEACH LEO VARADKAR.

In January, for the first time since 2007, the Irish government—which was so savaged by the global financial crisis of 2008 that it was under the International Monetary Fund's thumb until 2013—announced a budget surplus. Drastic survival tactics had paid off, including cutting public-sector salaries by as much as 20% and freezing all public-sector hiring and promotions. It had been uncomfortable. The collapse of the Celtic Tiger bubble—with its bankruptcies, layoffs, and foreclosures—was anything but a distant memory. But Ireland was back in the black. Imagine the indignity, then, for its top minister to step up to a lectern and tell the press four grim words: “Nobody will go hungry.” A panic over food shortages had gripped the country ahead of Varadkar's budget

Illustration by **Nicolas Ortega**

announcement, sparked by the specter of a so-called “hard Brexit” by its top trade partner, the United Kingdom. (About half of Ireland’s food and live-animal imports come from the U.K.) The Irish government published a contingency action plan warning of “severe macroeconomic, trade, and sectoral impacts.” A flurry of tense news headlines followed.

Such is the paradox of Ireland in 2019. It has the fastest-growing economy in the European Union for the fourth-straight year with a gross domestic product that shot up from \$226 billion in 2012 to \$334 billion in 2017, a total that surpasses the GDP of Denmark and is roughly double the per capita count of France or Spain. Yet an uneasiness has permeated since 2015. That was the year the Irish GDP ballooned by 26%, inflated in part by a reclassification that included “inversions,” in which U.S. companies move their headquarters overseas in pursuit of lower corporate taxes. Ireland, it seemed, was Schrödinger’s economy: both flourishing and feigning. Nobody dares lift the lid to find out if the gains are rooted in reality or financial sleight of hand.

Then came Brexit. In 2016, Ireland’s only neighbor by land and erstwhile colonizer voted to walk out on the EU and its \$17.3 trillion common market. The move to secede, called Brexit and triggered by a slim majority (51.9%) in a national referendum, has unfolded as a Shakespearean tragedy of reckless vanity and hubris, shaped by quasi-comical political chaos in London. The British powers have not been as riven by intraparty defections, parliamentary defeats, and general acrimony since 1886, when then-Prime Minister William Gladstone announced his support for Irish Home Rule. More than a century later, stiff-upper-lip Britain’s tumble into confusion and calamity has heightened plucky Ireland’s reputation for calm and clarity and turned it into an attractive destination for upwards of 12,000 once-British jobs, according to the City of London’s own estimates.

“Brexit is creating a contrast that hasn’t existed before,” says Kenneth Armstrong, a professor of European law at the University of Cambridge and author of *Brexit Time*. “It has unleashed Britain’s demons and given Ireland a halo. Ireland seems modern just as Westminster’s system of muddling through makes Britain seem like a Victorian relic.”

In other words, as Britain self-combusts, Ireland—with its young workforce, low taxes, and English fluency—is poised to pounce.



IT’S NOT HARD TO FIND evidence of economic ambition in Ireland’s largest cities. In the Irish capital, the storied Trinity College is building the first unadjoined part of its campus since its founding in 1592: a billion-euro, 5.5-acre, 400-startup “innovation district” with the aim of turning the university into Europe’s MIT or Stanford. Apple—which has been in Cork, on the southern tip of the island, since

1980—expanded its campus in the city last year from 5,000 to 6,000 employees. In Limerick, Ireland’s third-biggest city, 2 billion euros’ worth of planning projects have been submitted over the past decade, according to estimates by EY-DKM Economic Advisory Services. In Galway, on the west coast, a two-acre, 100-million-euro, 370,000-square-foot waterfront complex is under development, a response to continued demand for Irish office space. Suddenly, Ireland has become a nesting ground for a flock of towering beasts once thought to be the stuff of fantasy: construction cranes.

Executives at some of the world’s largest banks have noticed. Ahead of the Brexit deadline, Bank of America Merrill Lynch and Barclays moved their EU headquarters from London to Dublin in a bid to minimize disruption; Barclays alone has shifted some \$215 billion in asset management to the Irish capital. (Both banks declined to comment on the moves.) Rivals Citigroup, Morgan Stanley, JPMorgan, and Goldman Sachs have promised to bulk up their own Dublin operations in the face of U.K. uncertainty, even as they maintain offices in the British capital.

Several multinational tech companies with operations in Ireland have also unveiled plans to deepen their investment, though some say Brexit has little to do with it. Facebook, for example, has expanded its physical footprint in four sites across Ireland—its largest outside the U.S.—and plans to hire 1,000 new employees this year, bringing its total to more than 4,000. Google recently hired 1,000 workers and dedicated a building to its cloud-computing team. Both tech titans were responsible for some of the biggest real estate deals in Irish history; both, it should be noted, have also committed to sizable expansions in London’s Kings Cross district. (Facebook and Google declined to make executives available for comment.) Microsoft, which has operated in Ireland since 1985, will employ 2,200 people after its latest recruitment push, mostly at its campus in Leopardstown, about seven miles from central Dublin.

Last year Ireland counted 230,000

employees of multinational corporations, its highest-ever number and a significant slice of the country's 4.8 million population. According to the Industrial Development Authority, Ireland's foreign-investment arm, more than 4,500 jobs will move from London to Dublin as a direct result of Brexit—and with them a sizable chunk of what EY estimates to be a trillion-dollar asset exodus from Britain.



LOISTERED WITH HIS AIDES

in a private meeting room of Dublin Castle, the capital's seat of political power since 1204, Tánaiste Simon Coveney, with a measured tone that betrays the enthusiasm of his words, argues that there's nothing precarious about Ireland's economic position, Brexit or otherwise. "The Irish economy is now more sustainable than it's ever been," he says. More than that, even: "We like to see ourselves as the most open economy in the world. Maybe [second] after Singapore."

He would know. Coveney—who is at once Ireland's deputy prime minister, its minister of foreign affairs, and its chief negotiator in Brexit matters—says Ireland is in "expansion mode." He is overseeing a massive buildup of Irish embassies and consulates that he calls a Brexit-aware response to the global community's "overreliance on the U.K.," adding: "We're doing it at a pace that hasn't happened since independence."

The push so far includes Irish embassies in Amman, Bogotá, Kiev, Manila, Monrovia, Rabat, Santiago, and Wellington, as well as consulates in Cardiff, Frankfurt, Jaipur, Los Angeles, Mumbai, Vancouver, and a pan-cultural hub in Tokyo called Ireland House. Buoyed by the imminent centennial of its nationhood, in 2022, there is a sense that Ireland is flexing its independence.

Irish courtship of Asia, that Western cure-all for economic development, has not gone unrequited. In November, Chinese electronics company Xiaomi partnered with Hong Kong telecom provider Three to launch a rash of new

products following an announcement that Xiaomi would set up shop in Dublin. Last year Huawei, which also has Dublin offices, brought broadband optical fiber to 50 Irish towns as part of a contracted partnership with Vodafone. In June, Japan's SoftBank revealed plans to pilot its "smart city" platform in Dublin as a global prototype.

"It's all linked to a new confidence in Ireland," Coveney tells *Fortune*. "You're seeing Ireland essentially investing in a footprint." The best foot forward, surely, yet his boosterism raises questions: Does the world need a European Singapore? Or even want one?

Irish government officials dislike when the country is called a tax haven for its 12.5% corporate tax rate and often respond by pointing to Hungary's 9% rate, the lowest in the EU. (Britain's is 19% and will drop to 17% in 2020. The average among EU countries is 21.68%, according to the Tax Foundation.) To Ireland's credit, the workers coming to the country offer more heft than a post office box in the Cayman Islands. But the overall effect has made Ireland more like Europe's Delaware than its Singapore. Too many headquarters spoil the broth.

"Moving companies to Dublin does not turn Dublin into London," says Swati Dhingra, an economist at the London School of Economics. "The dispersal—to Paris, Munich, wherever—means that nobody will inherit the conglomerate force that London had."



A gay man of Indian-Irish heritage in a country that decriminalized homosexuality in 1993, Leo Varadkar, Ireland's head of government, embodies a more worldly, confident country.

You might get a bigger slice of pie, but the pie itself is getting smaller. There are no winners here. London is diminishing, but nowhere is becoming the next London.”



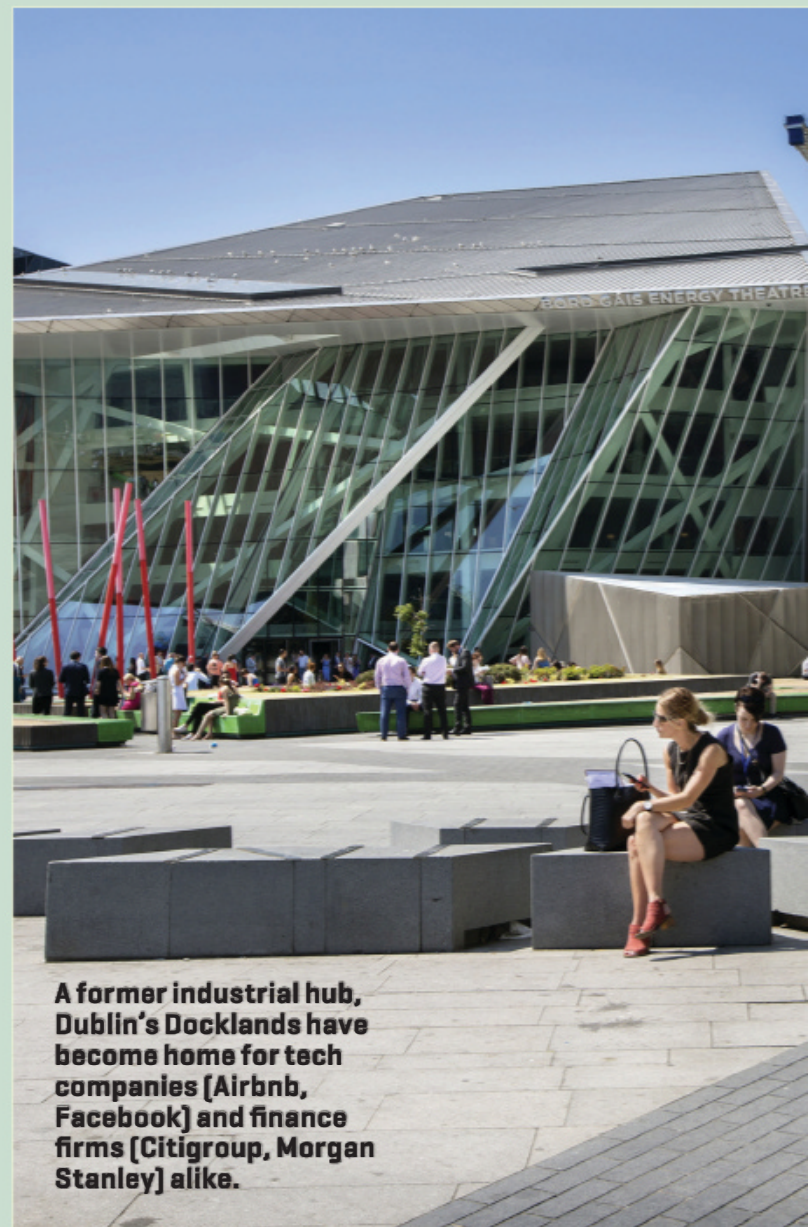
THE ASCENT OF IRELAND as a global player and the subtle shift in power between it and the U.K. isn't going over well with some in Britain—namely, the Brexit supporters who remain in Parliament. One Conservative member derided “the obdurate Irish government” for being overly concerned with border issues. Another was widely condemned in December for suggesting that Downing Street use the threat of economic damage, including food shortages, to compel Ireland to agree to a more favorable deal for the U.K.—an uncomfortable echo of the Great Famine of the 19th century. “We simply cannot allow the Irish to treat us this way,” an unnamed member of Parliament reportedly told a BBC columnist that same month, adding: “The Irish really should know their place.”

The Brexit decision remains hotly contested more than two years after the original vote, but despite Britain's mixed bag of opinions, most agree it's an existential inflection: Talk of Brexit-abetted Irish reunification has gained traction, and Scotland's own roiling independence movement continues.

Seated along the cosmopolitan corridor of Dublin's Capel Street—amid Brazilian, Chinese, and Eastern European grocery stores; Korean barbecue joints; Filipino lunch spots; Malaysian greasy spoons; Moroccan cafés; and sushi bars—Niamh Bushnell, the Irish government's onetime commissioner of startups who now heads up nonprofit consultancy TechIreland, believes Ireland is poised to benefit from Britain's momentary mania. “The U.K. doesn't just have Brexit on its plate,” she says as she digs into a downright San Franciscan brunch of avocado toast with spiced chickpea, beetroot powder, and chorizo. “It's in the Age of Brexit. Even without this mess, they'd be in a sorry state. They are Europe's Trump—crazy, but in an unnerving, zeitgeisty way.”

The businesses moving to Dublin, Frankfurt, and Paris are not fly-by-night call centers, sweatshops, or hubs of unattractive work. Rather, they are the white-collar, green-collar, and gold-collar jobs upon which the 21st century's economic power is being built. Ireland seems prepared to grab them all. “Small is beautiful. It keeps us agile,” says Bushnell, herself not quite 5 feet 3 inches. “We can't scale nationally. We can only scale internationally. Instead of going wide, we are going deep. That has sent us up the value chain. We're not call centers anymore. People are taking our calls now.”

If it sounds like the giddy optimism of millennial invincibility, that's because it is: With a median age of 35.9, Ireland has the youngest population in the EU, putting it on par with such booming populations as those of Brazil, China, Qatar, Singapore, and Thailand. (The EU-wide median is 42.8; Germany claims the highest median age at 45.9.) “We always had cachet but were seen



A former industrial hub, Dublin's Docklands have become home for tech companies (Airbnb, Facebook) and finance firms (Citigroup, Morgan Stanley) alike.

as riding coattails, either of the U.K. or the EU,” says Daniel Mulhall, an Irish ambassador who has served in Britain, Germany, India, and is currently ambassador to the U.S. Times have changed. “We became our own country,” he says. “We have our own ideas at last.”



IN A BRISK WINTER day in Dublin, I join Des Traynor, a founder of local business software startup Intercom, for a midday stroll through St. Stephen's Green. A onetime foxhole for rebels in the 1916 Easter Rising, the public park is now a tranquil and tony oasis at the end of a busy shopping thoroughfare. Traynor, 37, is extolling the virtues of Irish culture: “Nothing but saints and scholars, they called us. As it turns out, saints and scholars are exactly what we need these days.”



As we walk along the path, the tech entrepreneur explains why he believes Ireland's recent economic luck goes beyond a Brexit bump. "Our real talent is hope. And kindness. We don't gloat, more like bemusement at how fate works its way out," he says. "The Celtic Tiger had us thinking money didn't suit us. It was more that arbitrage, marketing, cybersquatting, and the stupidity of stupid money didn't suit us." He cocks his head at a bevy of swans idling on a lake and

"MOVING COMPANIES TO DUBLIN DOES NOT TURN DUBLIN INTO LONDON ... LONDON IS DIMINISHING, BUT NOWHERE IS BECOMING THE NEXT LONDON."

IRISH INDEPENDENT/EYEVINE/REDUX

pulls in a whiff of fragrant park air. "There's more to business than numbers."

A cultural revolution has certainly helped make Ireland more internationally attractive. By referendum, Ireland last year rewrote its constitution to legalize abortion, just three years after it legalized gay marriage, also by referendum. The Irish government last year barred the Catholic Church, which controls 90% of the school system on its behalf, from admissions discrimination on religious grounds. Look no further than Taoiseach Varadkar to mark social progress; he is a gay, unmarried, 38-year-old man of Indian and Irish descent who is the head of government in a country that only decriminalized homosexuality in 1993. In the U.S., this would be the equivalent of the first black president taking office in 1888, not long after the abolition of slavery. "It's no coincidence," Traynor says, "that the people fighting for our future here are the ones who can still remember living in its past."

Ireland is, however, not without its problems. Income inequality is worsening. (At 150,000 euros, the average Facebook salary in Ireland is triple that of the average Irish worker.) With 37% of its foreign investment from the U.S., Ireland remains susceptible to an economic slowdown across the pond. And those Brexit-boosted numbers won't last forever. In February, the European Commission revised downward its growth predictions for Ireland for the year, from 4.5% to 4.1%. The culprit? Uncertainty about the fallout from Britain's exit from the EU, of course.

PATRICK WALSH COMES TO Grogan's Castle Lounge, largely locked in amber in Dublin since 1899, precisely because he's confident that it hasn't changed. It's cash only. There's neither television nor music, and don't even think about asking for Wi-Fi. Walsh, the founder of Dogpatch Labs, an incubator touted as the silicon savior of the city by the likes of Prince Harry himself, calls it an oasis of authenticity—and a barometer of it too.

"We don't know how to be rich," Walsh says, noting that the Gaelic toast "*Is fearr an tsláinte ná na táinte*" translates as "To health not wealth." He adds with equal parts pride and woe: "We barely know how to be European. We're kind of our own thing."

Like many tech entrepreneurs who call Dublin home, Walsh has seen the ups and downs of Ireland's economy. His office in the city's Docklands district—the "Digital Docklands" to some—is a short walk to outposts for Airbnb, Facebook, Google, and Twitter. It's also steps away from JPMorgan, Morgan Stanley, and Citigroup. Washing down bites of a ham-and-cheese toastie with Guinness, Walsh offers a history lesson: "When this was all a British stronghold and they were pushing back the Gaeltacht"—the areas where the Irish language took primacy—"they called Dublin and this whole area the Pale. There's a wall! And the worst thing a right honorable Englishman could do was go beyond that wall—beyond the Pale. It wasn't safe."

Walsh considers Ireland's recent fortunes and laughs. "We're beyond the pale now, aren't we? Time to hold on to our hats," he says. He raises his eyebrows, spirits, and pint in one fluid move, then grins. "But hey—we've got hats." ■



“We have a phenomenal culture fostered by teamwork and camaraderie. I continue to be inspired by the commitment of each and every team member.”

NIKKI SUMPTER
SVP and Chief Human Resources Officer,
Atlantic Health System

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IN RESPONSE TO THE RECENT

federal government shutdown, Atlantic Health System went to extraordinary lengths for its team members, their families and the community. Realizing the importance of supporting team members' overall well-being, AHS took a holistic approach by offering grants, free health and wellness visits, hosting a system-wide food drive and holding a job fair for furloughed government workers.

The response is typical of the kind of caring culture that defines the Morristown, N.J.-based company, which operates five medical centers, a children's hospital and more than 400 sites of care. It is a culture that drives team members' commitment to their patients, their communities and the company's success, and it illustrates a team member centric mindset that has made AHS one of the best places to work.

“We are focused on providing an extraordinary experience for our team members so they may deliver exceptional care for our patients and families when they need us most,” says Nikki Sumpter,

Senior Vice President and Chief Human Resources Officer at the company. “We have a phenomenal culture fostered by teamwork and camaraderie. I continue to be inspired by the commitment of each and every team member.”

At the core of this approach is a unique total rewards package designed to meet the needs of a diverse, dynamic and engaged workforce. The team's favorites are telehealth visits, pet insurance, day care and eldercare services, and mobile and onsite dental care. The company also supports career and professional aspirations through programs that include career coaching, tuition reimbursement, leadership development, fellowships, and learning and development classes.

It's little wonder then that Atlantic Health System is one of this year's *Fortune* Best Companies to Work For as it has been for the past 10 consecutive years—an honor not lost on the company's team members.

“Being on the list is an affirmation of our great workplace,” notes Sumpter. “The strength and success of our organization ultimately depends on our outstanding culture and our continued focus on attracting diverse and innovative team members.”●



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MISTER FIX-IT
"Design thinking" is
a tool with the power
and flexibility to tackle
enormously complex
social systems,
writes Tim Brown:
"Redesign democracy?
No problem!"

THE NEW BLUEPRINT

BUSINESS BY DESIGN

Design-driven thinking has changed the way companies develop their products and reach their customers. Can it help them take on society's biggest challenges?

By **TIM BROWN** with Barry Katz



From the forthcoming *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, Revised and Updated* by Tim Brown. © 2019 by Tim Brown. Reprinted by permission of HarperBusiness, an imprint of HarperCollins Publishers.

Founded in 1991, the global design firm IDEO has created radical and useful products ranging from Apple's computer mouse to insulin-delivery systems for Eli Lilly. The firm has also become perhaps the best-known practitioner of "design thinking," a collaborative approach to solving business problems that delves into the interactions of worker and technology, customer and product, in innovative and creative-block-busting ways.

In his 2009 bestseller, *Change by Design*, IDEO president and CEO Tim Brown, with IDEO fellow Barry Katz, evangelized design thinking to the business world. In an updated edition, to be published in March, they make the case that the practice can scale up to tackle even society's most intractable "wicked problems."

WHEN WE PUBLISHED *Change by Design* a decade ago, we set out to make two points. First, design thinking expands the canvas for design to address the challenges facing business and society; it shows how a human-centered, creative problem-solving approach offers the promise of new, more effective solutions. Second, design thinking reaches beyond the hard-won skills of the professional trained designer and should be available to anyone who wishes to master its mindsets.

Since then, the cluster of approaches we call design thinking has

been embraced by businesses, social organizations, and academic institutions in every part of the world. Some of the most influential technology companies—Apple, Alphabet, IBM, SAP—have moved design to the very heart of their operations. Designers are part of the founding teams of disruptive startups across Silicon Valley and around the world. Health care systems, financial services firms, and management consultancies now regularly employ designers, while teachers are bringing design thinking to kindergarten classes, senior high school courses, and everything in between.

Design thinking has truly come of age. And yet we should not rush to congratulate ourselves, for we are rightly asked what it takes for such thinking to truly have significant impact.

That question has particular resonance at the intersection of design and technology, as the business models of social media, artificial intelligence, and the Internet reveal their dark sides. Design thinking is not “the invisible hand”: Design thinkers have a responsibility to understand the outcomes they are designing for. This is a moment for “the visible hand” of design to make intentional choices about how we wish technology to serve humanity.

What are the problems to which designers, in partnership with the broader population of design thinkers, should be directing our energies? As we dive deeper into the 21st century, it becomes clearer that the majority of our societal systems are no longer fit for their purposes. They were designed to meet the requirements of the first machine age and have remained essentially unchanged since the 19th and early 20th centuries. What might be the impact if we can successfully apply our design-thinking skills to today’s truly “wicked problems”?

Through the lens of IDEO’s project work over the past decade, we can identify a cluster of dilemmas for which design has begun to chart promising solutions, even at this vast and open-ended scale.

Redesigning institutions

ONE SUCH OPPORTUNITY CAME TO US in 2011, in the form of a request from a Peruvian businessman, Carlos Rodriguez-Pastor. Peru consistently ranks near the bottom on global measures of science, mathematics, and reading proficiency; lacking an educated workforce, the country was at risk of squandering the opportunities afforded by its rapid economic growth. Rodriguez-Pastor wanted nothing less than to design a new education system, accessible to an emerging, but not yet affluent, middle class and scalable across the country.

The first phase of any human-centered design process is to understand the scope of the problem. In Peru, this required fielding a research team whose members embedded themselves in the lives of representative stakeholders: teachers and administrators; business leaders and Ministry of Education officials; parents and, of course, the schoolchildren themselves. Using in-home observations, group interviews, stories from the field, site visits, and hard data, the team formed an assessment of the problem, the constraints surrounding it, and the opportunities it offered. Then they got to work.

Reaching deep into the designer’s toolkit, an expanded team created not only a strategy but the means of implementing and manag-

ing a scalable K–12 school system: the curriculum, instructional techniques and resources, teacher development, buildings, operational plans, data dashboards, and knowledge-sharing systems, and a financial model designed to allow the schools to charge a modest \$130 monthly fee. (A visionary idea that cannot be sustained through normal market mechanisms is likely to remain just that: a vision.) The 2018 school year opened with 49 Innova Schools across Peru, enrolling more than 37,000 students and employing some 2,000 teachers; an adaptation is being piloted in Mexico.

What we learned in Peru was the value—indeed, the absolute imperative—of integrated whole-systems design, of understanding a problem at its most fundamental level, locating it within its broadest context, and mobilizing the fields of expertise necessary to tackle it. Another key insight: Schools, no less than sunglasses, street signs, or electric scooters, are designed—and like any other artifact of our civilization, they may be designed well or poorly, or may simply have been designed to meet challenges that are no longer relevant.

Dean Logan holds the supremely underdesignerly title of Los Angeles County registrar-recorder/county clerk. In that capacity, he oversees the biggest voting jurisdiction in the U.S., with a voter population larger than that of 42 of the 50 American states and which must be supported in more than a dozen languages. Logan sought us out with a straightforward question: “Could we design a new voting system, one that works for all voters?” Redesign democracy? No problem!

In the past, that might have meant framing the problem as the redesign of a 50-year-old voting machine. While there is no designer who does not honor the artifact, designers today are learning to think not only in terms of stand-alone products but also of systems, the complex social networks of meaning, behavior, and power within which products are embedded. We are learning to think not about nouns (“How might we design a better voting machine?”) but of verbs: “What would be a better way to enhance the democratic experience?” When we focus on nouns, we lock ourselves into an incremental mindset: a better toothbrush, a more comfortable desk chair, a quieter air conditioner. But when we think about verbs, we blow the roof off the problem and are able to approach it in all of its wicked complexity, which has always been the condition of real innovation.

The reference design we ultimately created, in partnership with Los Angeles County and Digital Foundry, is as much a study in the social and behavioral sciences as mechanical and software engineering. The team spent hundreds of hours observing, listening, interviewing, and conducting user-testing sessions in order to understand the motivations people bring to the ballot box. They met with voters who are confined to wheelchairs, who are developmentally disabled, and who are blind (even Stevie Wonder weighed in to help validate one of the models). They observed the workers who load the machines onto the trucks that will deliver them to 4,800 polling locations, and interviewed the volunteers who will assemble them once they arrive. They identified physical obstacles as well as the intangibles of security, privacy, and trust, and learned to navigate the fraught political, legislative, and regulatory environment. On the basis of this far-flung research, the team articulated a set of design principles, tested them on dozens of prototypes, and ultimately created a working model guided by a single, overarching philosophy: one machine for all.

Will “Project Vox” solve the malaise afflicting American democracy? Probably not. But we’ll learn a lot when 31,000 new voting devices are rolled out in time for the 2020 elections.

Redesigning design itself

THE CONTINUOUS ERUPTIONS of new technology and the relentless integration of today’s connected universe are driving us to apply design thinking to ever more complex systems. IDEO’s “Future of Automobility” team has set out to grasp the underlying technologies of the autonomous vehicle—what it realistically can and cannot be expected to do—and to consider the ways the technology could reshape our cities. With Datascope, a data-science company we acquired last year, we have launched a new practice we call D4AI, or “Design for Augmented Intelligence,” which aims to ensure that the next generation of smart products—our phones, our cars, our clothing, our medications, our services—will engage us in ways that are dynamic, flexible, and responsive to the rhythms of everyday life. We’ve even begun to apply design thinking to reimagine the end-of-life experience.

But perhaps the most daunting task on the agenda of designers—and design thinkers—is enabling the “circular economy.” The modern

ROAD RULES FOR A CREATIVE COMPANY

Instilling design thinking at work requires a blend of bottom-up risk-taking and guidance from above. Some key principles:

LET EVERYONE PLAY. The best ideas emerge when the whole organization—not just designers and engineers—has room to experiment.

GET FRONTLINE INSIGHT. Those most exposed to changing externalities [new technology, a shifting consumer base, strategic opportunities] are best positioned and most motivated to respond with new ideas and products.

TRUST THE BUZZ. Ideas should gain a vocal following, however small, before earning organizational support.

SET A STRONG “WHY.” Articulate an overarching purpose so that innovators don’t feel the need for constant supervision.

world was founded on the assumption that our resources are infinite and inexhaustible: Who could have imagined that we might one day run out of oil? Or forests? Or fish? Or empty places to dispose of the by-products of our material prosperity? But that is precisely the predicament in which we now find ourselves, locked as we are into a linear economy that begins in a mine, quarry, or oil rig and ends in a landfill.

A circular economy, in contrast, aims to retain and recover as much value as possible from products, parts, and resources. Our ability to redesign industrial systems to be restorative and regenerative, to transform waste into a nutrient for the next generation of industry, and to rethink the assumption that product life cycles must have a beginning, a middle, and an end, will be the measure against which our generation will be judged.

The transition to a regenerative circular economy is now a declared objective of the European Union and of China, and a growing list of companies with global reach, such as Apple, Philips, Steelcase, and L’Oréal, have committed themselves to its implementation. In 2017, IDEO partnered with the Ellen MacArthur Foundation with the goal of producing a practical road map for businesses. Through our Circular Economy Guide (freely available online), we have begun to engage industry leaders in the pursuit of a business model that creates new value, delivers long-term economic prosperity and ecological stability—and turns a profit. And we are now in a position to propose concrete, practical measures that can be prototyped, piloted, and scaled.

Who would have thought, when the first industrial designers hung out their shingles, when the first graphic designers laid out a printed page, when the first generation of digital designers grappled with the mysteries of the Internet, that by virtue of their unorthodox training and their frequently antiestablishment practices, they would also one day have a major role to play in addressing challenges so urgent and complex?

But that is exactly what has happened, and we are now face-to-face with the biggest challenge of them all: to redesign design to meet these needs. ■

Tim Brown is the president and CEO of IDEO. Barry Katz is an IDEO fellow and a professor of design at California College of the Arts.

Veterans United Home Loans Rooted in Relationships, Enhancing Lives

A commitment to caring for veterans, communities, and one another shapes this specialized lender.

DAMARA DARKIS SPENT

weeks looking forward to a prom celebrating individuals with special needs, but when the 13-year-old caught the flu at the last minute, she had to stay home. When Damara's mom, Shirley, shared the sad news with her coworkers at Veterans United Home Loans, they weren't about to let the teenager miss out. They planned another prom night—this one in Damara's honor—and invited her friends to join.

For Shirley, a mortgage underwriter, this intentionality and thoughtfulness is why she loves being a part of Veterans United. "I'm happy I work for a company where there's a culture of caring," she says. "Everything we do for each other and for the veterans we serve is rooted in our mission to enhance lives."

That feeling of family helps drive the nationwide impact of Veterans United, the country's largest VA lender. For nearly two decades, the company has been committed to helping veterans understand and get the most from their hard-earned VA home loan benefits.

Veterans United and its employees are driven by a set of core values: Be passionate and have fun; deliver results with integrity; and enhance lives every day. They're a collective creation that guides the full-service,

**\$50
MILLION**

RAISED BY VETERANS
UNITED'S EMPLOYEE-
FUNDED FOUNDATION

"The people at
Veterans United
are this com-
pany's greatest
strength. We look
for people who
genuinely care
about making a
difference."

ERIK MORSE
HR Manager,
Veterans United

NO. 1
MOST VA LOANS
IN 2018

SOURCE: U.S. DEPARTMENT OF
VETERAN AFFAIRS FY 2018 LENDER
LOAN VOLUME REPORT

family-owned mortgage lender, which has 2,300 employees and is based in Columbia, Mo.

"The people at Veterans United are this company's greatest strength," says Erik Morse, an HR manager. "We look for people who genuinely care about making a difference."

More than 90% of employees donate at least 1% of their paychecks to the Veterans United Foundation, which serves veterans, local charities, and fellow employees in times of need. The foundation has raised more than \$50 million since its creation in 2011 and supports nonprofits such as Homes For Our Troops, the USO, and the Armed Services YMCA.

Veterans United employees also give their time. In 2018, they spent more than 1,600 hours helping build a home for Habitat for Humanity, the first of five they'll construct over the next five years.

And even new hires get in on the fun of bringing the company's values and impact to life. Before their first day, they get a \$10 bill in the mail with instructions to use it for a random act of kindness.

"I loved being empowered to make the world better," says Lily Williams, an IT support technician hired in 2018. "I feel like I get to do that every single day for our nation's veterans and for my Veterans United family." ■



WITH LOVE AND CARE, WE HELP EACH OTHER LIVE THESE VALUES.

**Be
Passionate
and Have
Fun**

We are committed to excellence and finding fulfillment inside and outside of work. By celebrating our accomplishments, learning from our mistakes, staying positive and embracing change, we continuously improve as people, as professionals and as a company.

We strive to amaze. As part of the VU family, we learn, grow and have fun together. As a team, we proudly serve those who have served our country, and we find purpose in knowing what we do matters. We are passionate.

**Deliver
Results
With
Integrity**

We recognize that execution is essential for the long-term success of our company. Hard work and excellence are expected from everyone on our team. As a company and as individuals, we do the right thing, never compromising our integrity.

We contribute to an environment of open and honest communication. We fulfill our promises, and strive to be the strongest, most knowledgeable VA loan team in the country. We deliver results.

**Enhance
Lives
Every
Day**

We believe that our success as a company is not measured solely by profits, but also by the positive impact that we have on the lives of our clients, co-workers, and community. Respect for everyone is a standard, not an objective. We support each other so we can use our time to do the things that matter inside and outside of work.

We genuinely care about the well-being of others and make a difference by giving our time and resources. We achieve more collectively than we ever could individually. We enhance lives.

WE ARE VETERANS UNITED.



Veterans United.
Home Loans



VeteransUnited.com | 1-800-884-5560 | 1400 Veterans United Drive, Columbia, MO 65203 | NMLS #1907 (www.nmlsconsumeraccess.org) | Veterans United Home Loans | A VA approved lender; Not endorsed or sponsored by the Dept. of Veterans Affairs or any government agency | Licensed in all 50 states

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PB & A.I.
Maurice Conti of Alpha describes A.I. as “sort of a peanut butter you can spread” across multiple disciplines, shaping the design of wind turbines, workspaces, and more.



REMADE BY DATA

Artificial intelligence is reshaping the “built world,” creating powerful tools—and troubling dilemmas—for designers.

By SPENCER BAILEY

A

T CALLAWAY, THE HIGH-END GOLF-EQUIPMENT STALWART, the process of making clubs has always been quite labor-intensive—from grinding and polishing clubheads to crafting wood-and-steel-shafted irons and wedges. The company has also long combined such artisanal handwork with technological innovation, even partnering with aerospace titan Boeing recently to codesign several aerodynamic clubs.

So when the company set out about four years ago to make its latest club line, called Epic Flash, it took the next evolutionary technological step, turning to artificial intelligence and machine learning for help. A typical club-design process might involve five to seven physical prototypes; for Epic Flash, Callaway created 15,000 virtual ones. From those, an algorithm determined the best design, selecting for peak performance—i.e., ball speed—while also conforming to the rules set forth by the U.S. Golf Association. *Golf Digest* gave the \$530 Epic Flash driver a score of 20 out of 20 on its 2019 “Hot List,” the only driver to earn that honor. A human could not have achieved this kind of rapid iteration, or precision.

The Epic Flash offers just a taste of the ways in which algorithm-driven design could transform our planet as it becomes significantly more common and, in time, even

the norm. “With a precise idea of the conditions this thing I’m designing will see in real life, I can design it better,” says Maurice Conti, chief innovation officer at Alpha, a Barcelona machine-learning firm and moonshot factory. Though still nascent, artificial intelligence and machine learning are starting to alter our built world, from spatulas to skyscrapers, helping designers solve technical problems with unprecedented speed.

To understand the profound shift taking place, one need only consider that, according to a new report from the UN’s World Intellectual Property Organization, more than 170,000 A.I. patents have been published worldwide since 2013, adding up to 50% of all patents in the field. And in the context of design, as with most things related to A.I., the results have the potential to be both terrifying and exhilarating. There are many questions to ponder: What will the role of the designer be when algorithms can largely design for us? Will the human hand (and heart) remain key to the process? At some point, will A.I. simply take over? Will A.I. actually produce inspired design—or will it coldly prioritize cost efficiency at the expense of comfort, aesthetic pleasure, and practicality?

The pioneers of this evolution are computer-aided design (CAD) companies like Adobe and Autodesk, as well as tech giants such as Google, IBM, and Microsoft. In 2016, Adobe launched a program called Adobe Sensei, a machine-learning network that powers its Creative Cloud software and many of its other platforms. Designers who work with Adobe have started using Sensei tools like image matching and readings of customer data in order to hone their own ideas. Last fall, the company introduced Intelligent Alerts, which metaphorically peers over designers’ shoulders to recommend relevant data sets they might not otherwise have considered.

Similarly, in 2017, Autodesk—the firm that kick-started the automation of design tools in the 1980s and ’90s with AutoCAD—announced its first commercial “generative design” product, Project Dreamcatcher. Designers use Dreamcatcher to test more design options more quickly: The program generates possibilities based on user inputs about objectives, materials, cost restrictions, manufacturing methods, and so on. One early Dreamcatcher use case: General Motors is developing auto parts with these tools, which it says are helping it build both lighter and stronger pieces.

Trades like furniture-making, architecture, and fashion are experimenting with these new tools and considering their industry-shifting potential. Two playful furniture-making exercises using A.I.—one by Radical Norms, a Toronto research company, implementing a Google-powered platform; another by designers Philipp Schmitt and Steffen Weiss that put 562 Pinterest photos of 20th-century chairs into a neural network—have generated furniture that would look more at home in a contemporary art gallery than on your veranda. But they point toward a future when A.I. could become an industry standard, allowing for hyper-personalized products with body-fitting designs and customized colors and patterns while also saving significant time and money.

In fashion, the Italian e-commerce platform Yoox has been among the first to introduce an A.I.-led line, the private label 8 by Yoox. The collection was created by compiling content from across social media and the Internet, focusing on key markets, and reviewing data about

trends, products sold, and customer feedback. The resulting men’s and women’s collections are unsurprising “essentials” that look sort of stylish without veering toward the outré—the outcome you might expect from designs that reflect an aggregated analysis of preferences rather than an individual artist’s flair.

Graphic design is another area that machine learning is affecting, with the venture-backed startups Tailor Brands and Logojoy at the forefront, both of them offering services that automate the making of logos, stationery, and the like for small businesses. Last year, chip designer Nvidia unveiled what it claims is the first-ever video game demo with A.I.-generated graphics. And at least one A.I. team is exploring scent design: Partnering with fragrance-maker Symrise, IBM Research recently developed perfumes using machine learning.

As the disparate list of experiments grows longer, design in general is on the precipice of a major morph, becoming far more data-driven, automated, and efficient. The risk is that design could become homogenized and lose its human dimension as designers become custodians of A.I.-driven ideas rather than users of the technology as a collaborator and tool.

There’s an alternative scenario: The importance of empathy might actually grow. As A.I. expert and venture capitalist Kai-Fu Lee points out in his book *A.I. Superpowers: China, Silicon Valley, and the New World Order*, there are two categories of things A.I. can’t do (at least not yet). One is carry out creative endeavors, like science, storytelling, art, and, yes, design; the other is build empathy, compassion, and trust—all of which require human-to-human connection. Only humans can truly make a product that meaningfully serves its customer. The same goes for understanding the complexities of an urban plan that serves its community.

As A.I. experts tell *Fortune* in the interviews that follow, the link between machine learning and design is just beginning to bear fruit. Soon enough, A.I.-led design will be an unavoidable shaper of the world around us. And it’s a certainty that design, like other industries being altered by A.I., is soon to face a host of social, cultural, and ethical dilemmas as technology changes job descriptions, re-allocates resources, and changes the physical environments where we live and work. It’s all the more important, then, that designers learn how to thoughtfully and compassionately steer A.I. rather than let A.I. steer them.



Three leading thinkers on artificial intelligence and design, including Mark Nitzberg (left) and Rana el Kaliouby, spoke with *Fortune* about the future of human collaboration with A.I. Edited excerpts follow.

Maurice Conti

Chief innovation officer, **Alpha**, a Barcelona machine-learning firm focusing on creating technologies that could reshape fields like health and energy.

“WE RECENTLY BUILT [AN A.I.] prototype to assess teamwork and collaboration. Our early results show that A.I. can perform at the same level as a trained human psychologist observing a team doing the same exercises, except [A] they’re machine systems so you don’t need the psychologist—it’s super scalable; and [B] we can do it in real time, whereas a psychologist has to observe and collate results, and give an opinion or rating on collaboration.

“I think you can apply these technologies to just about every small facet of any industry. You’ll get better at designing things like wind turbines or building curtain walls for buildings because we’ll have more data—better data—and a better understanding of that data. A.I. is sort of a peanut butter you can spread across [multiple industries]. With a precise idea of the conditions this thing I’m designing will see in real life, I can design it better.”

Rana el Kaliouby

Cofounder and CEO, **Affectiva**, a venture-backed company whose pioneering “Emotion A.I.” is used by brands in the auto industry, education, and health care.

“I DON’T SEE A WORLD in which the robots are going to take over. I really worry about the more imminent threats of A.I. around bias, though, and not understanding how these technologies are going to get deployed and used. We’re very big advocates of that [broad perspective].

“In A.I., we deal with facial recognition. If you train the face detector with mostly faces of, I don’t know, white men, and then you go to Africa or Asia, it’s not going to work. I’m originally from Egypt—I’m like, ‘We need women who are wearing hijabs to be in the data set!’

“We like to think of the vehicle as an example of what this advanced interaction with technology will look like. We can also take that into the home or the office. Last fall, [Affectiva] announced a partnership with SoftBank Robotics to make social robots. We’re going to be in the lead on the emotion and social brain of the robot.”

Mark Nitzberg

Executive director, **Center for Human-Compatible A.I. (CHAI)** at UC Berkeley, and principal and chief scientist, **Cambrian Group**, which works with companies like GE and BMW on planning, strategy, and design.

“[CHAI’S] MISSION is to reinvent A.I. in a way that’s safe and compatible with human objectives and preferences. Since the beginning of engineering, a system would be built to achieve the objectives of that system. As we delegate more and more to such systems, they achieve their objectives at the expense of our preferences. For example, our preference is not to have our arm ripped off when we walk by a robot. You would think it’s an obvious preference, but it’s not programmed into every robot on the assembly line. That’s why many are in cages.

“There may be some kind of intelligence in A.I., but it’s not a mechanical copy of human intelligence. If you asked [CHAI faculty member] Stuart Russell, ‘Will you create consciousness in a machine?’—you couldn’t give him \$5 billion to do that. He does not know how to do that, and I think most of the A.I. community would say the same.”



A Culture Built for Work-Life Success

Ryan, the world's largest firm dedicated exclusively to business taxes, makes employee needs a priority, and in return, employees go the extra mile for their clients—and one another.

AT A TIME WHEN MANY COMPANIES

are scrambling to find good talent, Ryan Global President and COO Ginny Kissling says Ryan remains focused on attracting and retaining the right talent through a variety of innovative and customized workplace programs and benefits. "People want to work here because they know they are able to manage their personal and professional lives, and their voices will be heard," Kissling says.

The Firm just marked the 10th anniversary of *myRyan*, a program that gives its 2,500 global employees the flexibility to decide when and where they get their work done. It was created, Kissling says,

"Every day is a challenge in this industry, but if you can find a way to make it fun and enjoyable for your employees, that's going to serve them and your clients quite well."

GINNY KISSLING
Global President and COO, Ryan, LLC

after a key team member tendered her resignation because of the rigid work arrangements in place at that time. "She told our chairman she loved her job but couldn't see how she could manage it and have a personal life," Kissling explains. "That was the beginning of a real culture shift for our organization." That employee is now a Principal in the Firm and received the annual Chairman's Award, the Firm's highest honor, for her role in helping to develop the *myRyan* program.

Using some of the most appreciated and unique systems targeted on the Firm's culture, Ryan constantly seeks feedback through a variety of channels to best improve the team-member experience. *RyanInnovates*, for example, is a platform that enables employees to offer suggestions for improving the workplace and the business. And *RyanPRIDE*, an online, newsfeed-style platform, allows team members to express appreciation and recognition for coworkers in real time, on a global scale.

The payoff is a happy, engaged workforce, which leads to happy clients, says Kissling. In fact, she recalls that early in her 26-year tenure with Ryan, a client told her he could hear her "smiling through the phone." That kind of employee experience "comes through in the way you deliver to your clients," Kissling says. It is also the reason Ryan boasts a retention rate of 88%.

When it comes to their clients, Ryan is just as proactive. Monthly, the Firm solicits client-satisfaction evaluations used to improve the client experience, much in the same way it solicits feedback from employees to enhance the team-member experience. "Every day is a challenge in this industry," Kissling says. "But if you can find a way to make it fun and enjoyable for your employees, that's going to serve them and your clients quite well." ■

And the credit goes to
our greatest assets...

YOU

To our Ryan team:

Thank you for your valuable contributions to improve our workplace and deliver exceptional results for our clients.

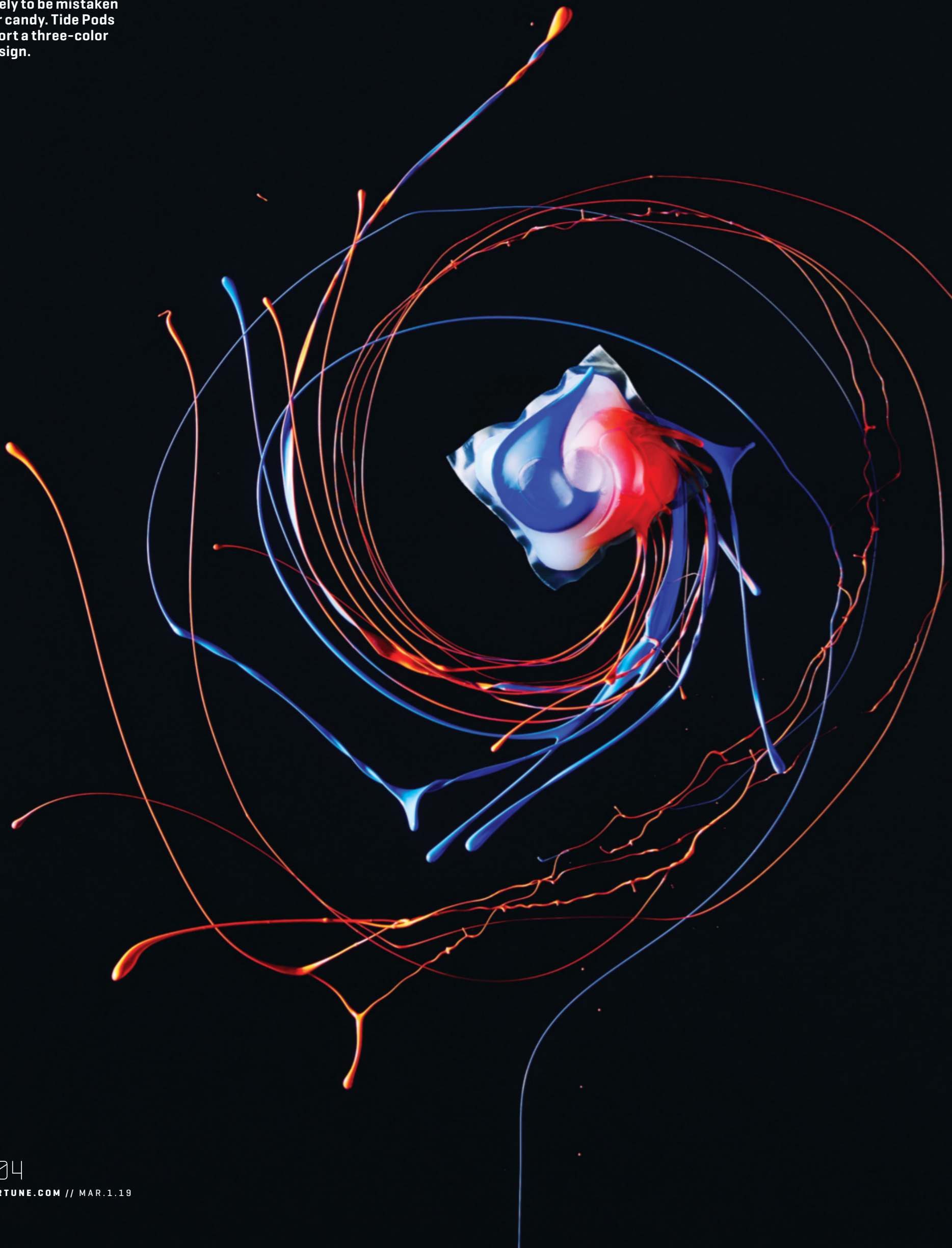
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COLOR WAR
Consumer advocates say multicolored pods are particularly likely to be mistaken for candy. Tide Pods sport a three-color design.



THE REAL TIDE POD CHALLENGE

A compact, colorful design turned laundry pods into a monster hit for Procter & Gamble. It also may have contributed to an epidemic of injuries among children. Have P&G and the industry done enough to make the products safe?

By JAKE METH

B

ELLA MANCILLAS IS STANDING ON HER HEAD.

For an 8-year-old to be exuberantly goofing off, performing cartwheels and splits while grownups are talking, is nothing out of the ordinary. But as her mother, Katie Mancillas, is explaining, in Bella's case, it's almost miraculous.

Six years ago, when Bella was 2, she was rushed to the hospital because she was vomiting so uncontrollably that she inhaled fluid into her lungs, blocking her airways. Not long after she arrived, Bella stopped breathing and briefly flatlined. "Oh, my God, I think Bella's gonna die," Katie remembers telling her sister.

The cause of Bella's near-death experience wasn't a nasty

stomach virus or a toxic pesticide. According to Katie, it was a squishy, multicolored packet that's an increasingly common presence in American homes: a Tide Pod.

Katie Mancillas often did the laundry for her large family in the suburbs of San Diego, lugging loads to the nearby laundromat. When she first saw the pods—easily portable packets of concentrated detergent, then new to the market—she thought they'd be a useful convenience.

On Nov. 17, 2012, Katie brought home her first case of Tide Pods, from Costco, and placed them on the kitchen counter. Katie recalls that the case was clear plastic, with a button on top that opened the lid when pushed. She was unloading her groceries, she says, when she turned around to see that Bella had opened the case and was about to put a pod in her mouth. She bit into it before Katie could snatch it away. "It literally did look like candy. And I honestly think that that's what she thought it was," says Katie.

Katie immediately called poison control and was told to force Bella to drink 32 ounces of water and wait 30 minutes to see if she started vomiting bubbles. "At 27 minutes, she started projectile vomiting," Katie recalls. "It was just bubbles, like from a bubble machine."

They raced to the hospital. When they arrived, Katie saw Bella turn blue as medical staff struggled to steer a breathing tube through the bubbles in her throat. After Bella was intubated, they transferred her to a children's hospital, where she was placed into a medically induced coma so that they could try to suction the detergent out of her lungs.

As Katie retells the story, Bella ends her impromptu gymnastics routine and nestles into her mother's side on the couch. Her otherwise bright demeanor—illustrated by the glitter that covers her T-shirt, backpack, and notebook—turns somber.

After two weeks of Katie not knowing whether her daughter would pull through, Bella started breathing on her own again. But she had serious challenges ahead. She had to relearn how to walk and talk. She got sick often after the episode, which her doctor surmised was because of the lung injuries she had sustained. The most serious effects have been on her eyes. Bella has a type of strabismus in which the eyes are misaligned vertically; her doctors attribute it to oxygen deprivation during the incident. She has struggled to read and write properly, and she's had two eye surgeries, with a possible third to come.

"It's hard," says Bella, who in this moment sounds more like a jaded adult than a carefree kid. "But you just kind of have to fight through it."

TIDE PODS ARE ARGUABLY one of the most successful innovations in the storied, 181-year history of consumer goods leviathan Procter & Gamble. They're also the top-selling brand in a household-product category that became ubiquitous practically overnight. Eight years ago, liquid-detergent packets were barely a presence in U.S. stores; by 2018 they accounted for nearly one-fifth of the laundry detergent market and \$1.5 billion in sales. And P&G, the maker of Tide Pods and another popular brand, Gain

Flings, controls 79% of that business.

But the design factors that have made laundry pods so successful—their compactness, easy accessibility, and aesthetically pleasing look—are also potentially fatal flaws. Too often, it appears, young children and seniors with dementia mistake them for candy and try to eat them. And when that happens, they're more likely than other detergents and other household cleaning products to cause serious injury.

Laundry pods' threat to public safety became apparent immediately after their North America launch in 2012. Between 2011 and 2013, the number of annual emergency-department visits for all laundry detergent-related injuries for young children more than tripled, from 2,862 to 9,004.

The majority of injuries resolve within 24 hours without long-lasting effects. Still, pods make up 80% of all major injuries related to laundry detergent, according to the American Association for Poison Control Centers (AAPCC), despite accounting for only 16% of the market. In rare cases like Bella's, long-term complications can ensue. And nine people have died in the U.S.—two children younger than age 2 and seven seniors with dementia—in cases definitively linked to laundry pods.

To the extent that most consumers are aware of these dangers, it's thanks to an asinine Internet trend. In late 2017 a handful of teenagers started posting videos online of themselves eating laundry packets in a surreal viral phenomenon known as the Tide Pod Challenge. That cultural episode cast laundry-pod poisoning as a self-inflicted wound, harming only the irresponsible. But the Challenge has accounted for only a tiny fraction of the injuries caused by this now pervasive product.

P&G and other detergent makers, startled by soaring numbers and prodded by regulators, have taken the product back to the drawing board more than once. But despite multiple changes to the pods' design and exterior packaging, intensive industrywide meetings on the issue, and seven years of brainstorming and testing, the situation has not substantially improved when measured by the total number of calls to poison-control centers and emergency-department visits.

Pods have prompted an average of 11,568 poison-control calls a year involving young children since 2013, their first full year on

BACK FROM THE BRINK
Katie Mancillas says her daughter Bella briefly flatlined after eating a Tide Pod at age 2; six years later, her medical problems continue.



the U.S. market. (The majority of calls, or exposures, involving pods are not associated with serious injuries, but they're the best population-wide data available to measure pods' impact on public health.)

And when injuries are inflicted, they remain disproportionately severe: In 2017, the most recent year for which figures are available, 35% of pod exposure cases among the whole population wound up being treated in health care facilities; for all other laundry detergents and for household cleaning substances, that figure was 16% when pods were excluded.

Consumer advocates and public health experts argue that, for all its well-intentioned efforts, the industry has refused to confront the brightly colored elephant in the room: the swirly, multi-hue design schemes that make the mini-packets look so much like candy. If manufacturers can bring themselves to make all pods look neutral and less inviting, says Gary Smith, director of the Center for Injury Research and Policy at Nationwide Children's Hospital, "we can design this problem out of existence."

P&G and other detergent makers point to different injury measures, arguing that they've brought down the market-adjusted rate of exposures even without such changes, by improving the childproofing of packaging and educating the public on proper safety habits. "Our job is to prevent children from having access to the product completely," says Damon Jones, P&G's vice president for global communications and advocacy.

While they haven't ruled out future changes, industry and regulators have announced no plans for a more aggressive safety intervention. But in an era in which many consumer-facing businesses have tremendous leeway to regulate themselves, the Tide Pod dilemma raises urgent and disturbing questions. Has P&G truly reached the limit as to how safe it can make its popular product? With no legal requirements to make pods safer, do ethics require the industry to go further? Can an "improved" product that still causes thousands of hospital visits a year be considered safe? And at what point does the manufacturer's responsibility for accidents end and the consumer's begin?

That these questions need to be asked testifies to a fundamental truth of America's consumer product ecosystem: It's largely up to companies to determine how to respond to a consumer hazard. While government agencies occasionally step in, safety decisions usually come down to business leaders balancing the success of a product against reputational and legal concerns. At least for now, P&G has made its determination: The Tide Pod is safe.

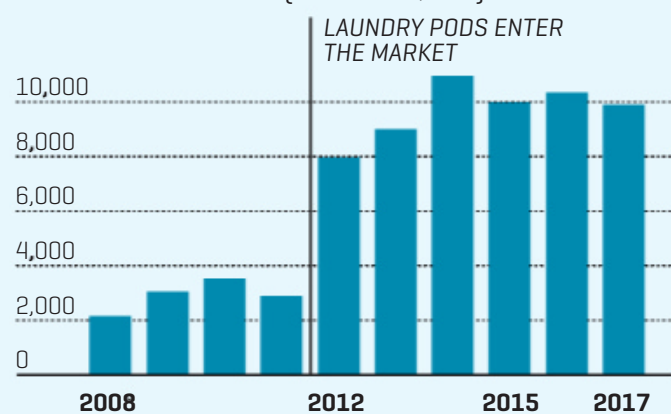
CONSUMER CONGLOMERATES like Procter & Gamble face a daunting challenge: They sell huge portfolios of famous brand names—in an era when many shoppers are happy to buy no-name brands to save a few bucks. By the early 2010s, that problem was becoming a drag on growth at P&G. And former employees say that Tide, a brand that dates back to 1946, was a case in point—no longer luring customers in its commoditized category. Laundry pods offered P&G a chance to restore Tide's competitive edge.

Fortune spoke with nine former P&G employees about the Tide

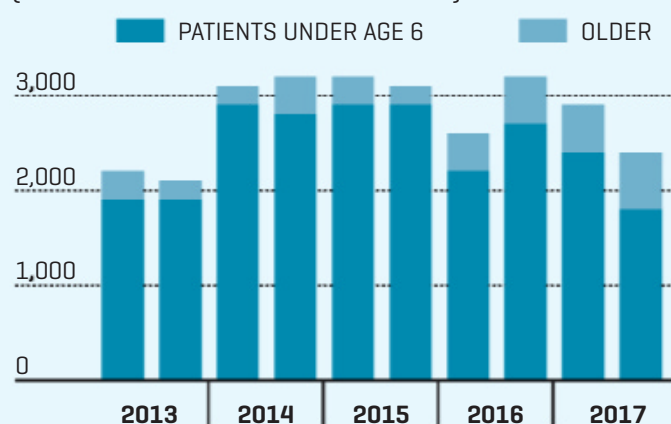
A CONCENTRATED IMPACT

Detergent-related injuries have soared since the 2012 introduction of laundry pods.

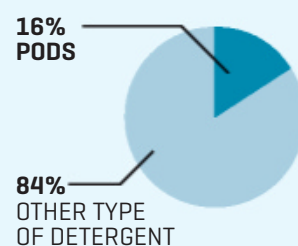
ALL LAUNDRY DETERGENT-RELATED E.R. VISITS BY PATIENTS UNDER AGE 6 (ESTIMATED, U.S.)



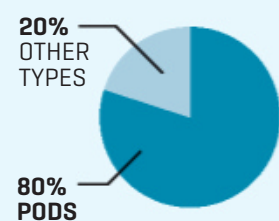
LAUNDRY POD-RELATED E.R. VISITS (SIX-MONTH PERIODS, ESTIMATED, U.S.)



LAUNDRY DETERGENTS MARKET SHARE (U.S., 2017)



MAJOR INJURIES RELATED TO LAUNDRY DETERGENTS (U.S., '17)



SOURCES: U.S. CONSUMER PRODUCT SAFETY COMMISSION; EUROMONITOR INTERNATIONAL; AMERICAN ASSOCIATION OF POISON CONTROL CENTERS

Pod's development, and their accounts tell a consistent story about the process. (P&G declined multiple requests to make current executives available for interviews. *Fortune* spoke with the senior manager responsible for overseeing its pod safety efforts and conducted multiple conversations with the corporate communications team.) The idea of selling liquid cleaning agents in pre-measured packets wasn't new: In 2001, P&G and Unilever started selling laundry pods in Europe that were larger than today's versions. Former

SPIN CYCLE

Manufacturers have redesigned laundry pods multiple times to address safety concerns, but consumer advocates have questioned the effectiveness of the changes.

EARLY 2001

P&G and Unilever launch liquid laundry detergent packets on the mass market for the first time in Europe. They're moderately successful.

FEBRUARY 2012

Tide Pods, a more advanced and smaller version of the European pods, debut in North America. They become an instant hit.

MARCH 2013

In response to large numbers of pod-related exposures being reported, the Consumer Product Safety Commission calls on manufacturers to develop safety standards.

MID-2013

P&G makes all Tide Pod tubs opaque, placating critics who felt the clear case resembled a candy jar.

FULL-YEAR 2013

In pods' first full year on the U.S. market, they surpass 10,000 exposures for children under 6. Despite multiple changes to the pods' design, they will stay above that level for the next four years.

FEBRUARY 2015

Members of Congress introduce legislation that would force pod manufacturers to make them less appealing to children. The sponsors say they'll withdraw the bill if manufacturers make safety changes voluntarily.

SEPTEMBER 2015

The industry and consumer advocates agree to safety rules

that all manufacturers must follow. They include requirements for childproof packaging and the application of a bitter-tasting agent on pods' exteriors.

FULL-YEAR 2015

Pod-related injuries to young children hit their peak, with 13,110 exposures and 5,800 emergency-department visits.

JANUARY 2017

All safety standards are implemented industrywide.

LATE 2017

Teens begin posting videos online of themselves eating laundry packets, in a viral phenomenon known as the Tide Pod Challenge. P&G responds swiftly with a PR campaign to stem the dangerous fad.

FEBRUARY 2018

Two New York State lawmakers send a letter to P&G calling on it to change the pods' design and threatening to pass legislation that would ban all pod sales in New York if packets aren't made a uniform color and enclosed in individual wrappers.

JUNE 2018

The safety standards group meets to review new data. The industry comes away confident that its approach is working, while consumer advocates say injuries haven't sufficiently declined.

MID-2019

The standards group is set to meet again to review the latest safety data.

employees say that given the moderate success of these packets, as well as its dishwasher detergent tablets, P&G was confident that its more advanced Tide Pods would catch on in North America. Beginning in 2004, P&G embarked on a development process that it hoped would turn the product into a hit. Over the next eight years, the company would later boast, P&G dedicated 75 staff members to the Tide Pod project, involved some 6,000 consumers in market research, and generated more than 450 packaging and product sketches.

As the final shape emerged, the development team was thrilled with the results. Tide Pods were fun to hold—squishy, yet firm. Their colors—Tide's signature blue and orange, in swirl-shaped chambers atop a white backdrop—stood out far more than the single-colored packets on the market at that point. And the pods came packaged in a clear tub, designed to show off the attractive design inside.

"We knew we had a breakthrough product on our hands," says Tom Fischer, a former P&G executive for fabric and home care sales, the division responsible for Tide Pods.

The pods' launch, in February 2012, proved them right. Shoppers seemed to love the convenience and the colorful form factor, and sales soared. In P&G's 2012 annual report, released just a few months after they hit the market, then-CEO Bob McDonald proudly described Tide Pods as an example of "innovation that obsoletes existing products." Between 2013 (liquid laundry packets' first full year on the U.S. market) and 2018, pod sales grew 136%, according to Euromonitor International, a market research provider. During that period, the overall laundry detergent category grew just 7%. Today, pods make up close to a quarter of P&G's overall laundry detergent sales.

A TV commercial that accompanied the Tide Pod launch in 2012 conveys the euphoria. In the ad, a woman draws a pod out of an open case and tosses it into the drum of a washing machine. In the background are sounds of bubbles popping and the upbeat Men Without Hats song "Pop Goes the World." The spot ends with the tagline: "Pop in. Stand out." But nowadays, popping is not an image P&G wants anyone to associate with Tide Pods.



AUNDRY DETERGENT INJURIES spiked immediately after pods came out. In 2011 there were 8,186 calls to poison-control centers regarding laundry detergent exposures among the entire population, according to the AAPCC; in 2013, that figure rose to 19,753.

Emergency-department visits related to laundry detergent increased even more sharply. And each year since then, at least 85% of exposures and 79% of E.R. visits have involved children under age 6.

"The Tide Pod, as it's designed, is an ideal product for attracting toddlers," says Mariana Brussoni, a child psychologist at the British Columbia Children's Hospital Research Institute. With laundry pods in general, "in terms of the colors they tend to have, the size, the feel, the fact that it can easily fit in their hands and their mouths—this is something that would be very appealing."

Brussoni emphasizes that the risk would be greatest for children

1 or 2 years old, who are old enough to be mobile but too young to know what's appropriate to eat. For kids that age, putting things in their mouth is "just another way of doing little experiments on the world," and can also ease the pain of teething. Slightly older children, ages 3 and up, would be past that phase—but would recognize pods as looking like candy.

The most severe of the pod-ingestion cases have involved symptoms similar to the ones suffered by Bella Mancillas: An influx of fluid causes the lungs to flood and shut down, cutting off the flow of oxygen to the blood so severely that it can cause brain injuries such as seizures or comas. Some victims also suffer severe eye injuries from chemical burns.

There's no consensus among health professionals as to precisely why pods have caused more serious injuries than liquid detergent has. One theory is that when the packets are bitten, their contents shoot into the throat with such force that they flow quickly down the trachea into the lungs. Another hypothesis is that the concentration of packets plays a role: Tide Pods, for example, have a 90:10 active-ingredient-to-water ratio, compared with about 50% water for liquid Tide. (Another complicating factor for health care workers: Manufacturers are not legally required to disclose all of their ingredients.)

When pods first came out and poison-control centers began getting calls, the centers followed the rules of liquid detergent poisoning: The person exposed was told to drink a bit of water, and the center would follow up after a half-hour, says Mark Ryan, president of the AAPCC. If there were no serious symptoms, the person exposed was not advised to go to a health care facility.

As poison centers increasingly witnessed severe injuries from pods, it became clear that those rules no longer applied. At the Louisiana Poison Control Center, which Ryan directs, he instructed call responders to follow up after only five to 10 minutes and monitor for respiratory issues. If those were detected, the caller was directed to go immediately to the nearest emergency room.

A few victims never got that far. Dennis Powers of Springfield, Ohio, was a kind, funny man who "never knew a stranger," according to his daughter, Robyn. A Navy veteran and die-hard Ohio State Buckeyes fan, Dennis was diagnosed with dementia in 1999. He was still in relatively good physical health on Feb. 15, 2014, when his wife, Darlene, dropped off some groceries at home, including a pouch of Tide Pods, and went out to get more supplies.

When she returned a few hours later, Darlene says, she found Dennis slumped over the back of his white rocking chair. The chair was covered in orange dye, and there was detergent coming out of Dennis's mouth. He barely had a pulse. Darlene called 911, but EMTs couldn't revive Dennis and pronounced him dead at the scene. He was 67.

Dennis's autopsy report declares that he died from asphyxiation resulting from ingesting a pod. Of the 31 pods that came in the pouch, five were missing: Two were found on the floor next to Dennis's chair, one in a drinking glass, and one in the trash can; all appeared to have been chewed. The report concludes: "The remaining pod was not found."

Recounting the incident at her lawyer's office in Ohio, just

before the fifth anniversary of Dennis's death, Darlene struggles to keep her composure. The only reason that could explain why Dennis ate a pod, Darlene and Robyn say, is that they look like candy. "He was used to eating swirled Life Savers," says Darlene.

P

&G SAYS TODAY that it had no unique concerns about the safety of Tide Pods at launch, given the lack of any poisoning crisis in Europe. Rick Hackman, head

of North America regulatory and technical external relations at P&G, says that the company applied the same stringent safety process to the pod launch that it does to all its products.

Yet P&G took an additional step that seemed to indicate an unusual degree of caution. Immediately after the launch, the company enlisted the Cincinnati Drug and Poison Information Center to collect data on exposures. In response to questions from *Fortune*, P&G says that a panel of external medical advisers recommended the data collection because the product was new to the market. (P&G also says the company took similar action when it introduced dishwasher packets, which are similar in size and shape.)

P&G declines to say whether the commissioning of the Cincinnati data collection reflected concerns that the product was uniquely risky. But Richard Dart, head of the Rocky Mountain Poison and Drug Center at Denver Health and an expert in the field of consumer safety for over 30 years, describes this as highly unusual. With "prescription drugs, if the FDA has concerns, they will require monitoring right from the minute it enters the market," he says. "But for consumer products, especially, I don't think I've ever even heard of one that did this."

In regulatory circles, meanwhile, the surge of pod injuries was dramatic enough to draw attention. In October 2012 the Centers for Disease Control and Prevention issued a warning to consumers that laundry pods, which had a "candy-like appearance," were "an emerging public health hazard." In March 2013 the Consumer Product Safety Commission (CPSC) issued a statement calling on the industry to take voluntary action to address the hazard. While the CPSC has wide regulatory powers, including the ability to force a mandatory recall or unilaterally develop safety standards for a product, it uses these levers only in rare instances when a product is

patently dangerous, says Cheryl Falvey, a partner at Crowell & Moring and former general counsel at the commission. Otherwise, she says, the commission prefers to nudge businesses and consumer advocates to come up with voluntary standards, which, despite their name, manufacturers are required to follow. And even in that context, the CPSC's call for action on pods was relatively unusual—something that Falvey says happens only once or twice a year at most.

While other manufacturers also make laundry pods, P&G as the market leader took the lead role in responding—and by most accounts, the company's actions were serious, urgent, and diligent. By mid-2012 it had already begun installing double-latch lids on the tubs containing its pods. And by the summer of 2013, P&G had changed the tubs' design to be opaque, placating critics who felt the clear tub resembled a candy jar. Still, the number of poisonings kept climbing. In February 2015, Sen. Dick Durbin (D-Ill.) and Rep. Jackie Speier (D-Calif.) introduced federal legislation that would have forced manufacturers to make the design of packets “less attractive to children” and use less caustic ingredients.

The legislators noted that they would drop the bill if the industry took stronger action on its own. In September 2015 that effort took concrete form as manufacturers, industry lobbyists, and consumer advocates approved a new set of safety rules. The standards required that pods have opaque, difficult-to-open packaging; standardized warning labels and safety icons on packages; and burst-resistant, bitter-tasting outer film.

By 2017 the new standards had been implemented across the industry. And in June 2018 the standards committee met again to review injury numbers and determine their progress. The results they saw, depending on one's point of view, were either a reassuring sign or an indictment of a failed safety system.

The studies measured the impact of the industry's safety intervention on children under 6, comparing a 12-month period before the new measures went into effect (July 2012 to June 2013) to a 12-month period after the intervention (calendar year 2017). During that time span, the number of pods sold more than doubled, from 2.1 billion to 4.7 billion, according to Nielsen data used in the reports. The upshot: The ratio of exposures to total pods sold dropped 53%; the ratio of exposures involving health care facility treatment to sales



UNTIMELY LOSS
Darlene Powers holds a photo of her husband, Dennis, whose death, according to a coroner's report, was caused by eating a laundry pod.

dropped 63%; and the ratio of exposures involving major medical injuries or death to sales dropped 86%.

For the industry, these were an important sign of progress. But consumer advocates at the same table saw a glass half-empty—because while injury rates, measured by market size, were down, injuries as measured by absolute numbers (and when adjusted for population growth) barely budged. Annual emergency-department visits dropped only slightly over that span, from 4,300 to 4,200, while total exposures actually rose slightly, from 10,229 to 10,776. (Exposures dropped to 9,440 in 2018, according to preliminary AAPCC data, but those numbers are likely to rise slightly once the data has been fully analyzed.) And the share of total exposures involving health care facility treatment—a measure of injury severity—dipped only slightly, from 42% to 39%.

As Rachel Weintraub, legislative director and general counsel for the Consumer Federation of America, notes, the reports “gave both sides data, to pursue either their views that it was working

very well, or views that more needed to be done.” Today, P&G cites this data as evidence that the industry’s approach is successful. “As long as we continue to see reduction in incident rates, even if the number of [poison-control] calls increased, we would think of it as progress, as the form is new and people are learning how to use it,” Damon Jones and Petra Renck of the P&G communications team told *Fortune* in an email.

Consumer advocates, meanwhile, argue that the industry is setting the bar too low. Measuring progress relative to market size is an incomplete measure of success, says Gary Smith, the injury expert at Nationwide Children’s Hospital, who has been part of the standards process. For 150 years, epidemiologists have used the absolute number of cases, or the number of cases relative to the population at risk, to measure public health burden, Smith says. “If this were Zika virus, and the number of cases of encephalopathy were still going up, but the number of cases per mosquito population were going down, we would take no comfort in that latter number.”

The standards group plans to meet again in mid-2019 for another progress review. Both sides hope to see further improvement, but that’s uncertain. Richard Dart, the Denver poison-control expert, notes that the decline in exposures has already started to slow. “We’d like the number of incidents to go down, and that’s how we look at public health measures across the board,” says Weintraub.

H

OWEVER ONE INTERPRETS the statistics, one thing is undisputed: The industry didn’t alter its approach to color. Tide has changed its signature color scheme to white, blue, and green from orange, blue, and white, but P&G says that change was not safety related.

Indeed, the multihued whorls that critics see as so candy-like are still the norm in the laundry-pod world.

P&G has long argued that research shows the appearance of packets doesn’t play a role in exposures. Asked to describe that research in greater detail, P&G cites two studies conducted by the Cincinnati Drug and Poison Information Center—both relying on the data that the organization began collecting at P&G’s behest when Tide Pods launched.

On closer inspection, those studies don’t resolve the question. P&G provided *Fortune* with a copy of the first study and sent excerpts from the second, which has not been published. The unpublished study found that when examining pods based on color (single vs. colorless) and design (single-chamber vs. multichamber), the ratios of exposures roughly matched the ratios of market share—so, for example, multichamber pods made up about 70% of exposures and 70% of market share. The other found that colorless and single-color packets caused roughly the same number of injuries for children under 6 when controlled for market size.

P&G says it’s confident that these two studies offer sufficient evidence that appearance isn’t a factor in pod-related injuries. Arthur Caplan, founding head of the Division of Medical Ethics at NYU School of Medicine, disagrees. Caplan says that manufacturers have to “use the best science” to make their products safer, and that relying on one data set, as P&G appears to have done, is not a sufficient approach. The company, Caplan says, should also

examine “data from other products that bears on this question.”

To prove or disprove a connection, health professionals say, P&G would need to study how pods’ smell, feel, and appearance—including Tide Pods’ multicolored swirls—appealed to vulnerable populations. For example, “you would need to do a randomized controlled trial, varying pod designs and monitoring reactions to them” to know for sure which factors attract young kids, says Brussoni, the child psychologist. “But to my mind, why bother? Why have these colors anyway for a product for an adult that’s doing laundry?”

For now, such research doesn’t appear to be in the cards—for any manufacturer. Jones disputes the premise of studies like those described by Brussoni. “We don’t put two different pods in front of a kid,” P&G’s Jones says, “and say, ‘Grab one.’ It’s not a real-life situation.” Rather than changing the pod design, P&G has stressed in its conversations with *Fortune* that making packaging more secure and educating caregivers about safe use are the most important measures it can take to improve safety. Henkel, whose laundry detergent brands include Persil and All, declined to discuss possible safety improvements but said it was compliant with the current voluntary standard. Church & Dwight, whose brands include OxiClean and Arm & Hammer, did not respond to *Fortune*’s requests for comment.

Vincent Weill, who led P&G’s efforts to incorporate design innovations into the Tide Pods product between 2012 and 2017, and who now works at a company that is not a competitor, tells *Fortune* that he was involved with projects to make pods safer that have continued since he left the company. Among them were reformulating the liquid to be less toxic and strengthening the packets to be more resistant to bursting or leaking.

P&G declined to comment on the projects described by Weill or any other specific possible changes. Jones describes the company’s effort to make pods safer as an “ongoing journey” of continual improvements.

I

N MULTIPLE EXCHANGES with *Fortune*, P&G emphasized its efforts to educate the public on how to use pods safely—through labeling, advertising, in-person safety education sessions, and the blogs of influencers the company works with. When the Tide Pod Challenge became a sensation in late 2017,

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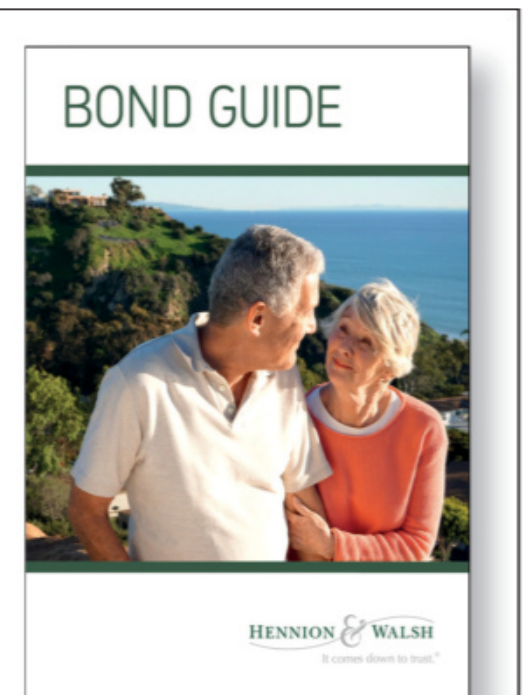
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injuries were few, but the negative publicity was immediate—and P&G’s response was swift. The Tide Twitter account admonished teenagers never to eat packets. The company quickly produced a TV spot featuring All-Pro New England Patriots tight end Rob Gronkowski, lecturing, “Use Tide Pods for washing, not eating.”

P&G’s emphasis on education is a kinder, gentler version of a defense that’s common to consumer product manufacturers: that shoppers are ultimately responsible for using products properly—or not. But consumer advocates chafe at the implication that the primary fault for pod injuries lies with parents and caregivers. With a mass-market product like this, says Caplan, the ethicist, “the duty is there, when any product enters the household, to make sure that it is as safe as can be.”

Consumer advocates are adamant that detergent-makers haven’t cleared that bar. What’s more, says Gary Smith, the injury expert, American society has largely bought into the belief that household injuries are entirely about personal responsibility. “When you talk to a parent whose child has been injured and brought into the emergency department... they will tell you, ‘It wasn’t the product, doctor. It was me. I’m a bad parent. I didn’t watch my child carefully enough,’” Smith says. “They’ve bought the myth that it’s them that’s the problem.”

For now, federal regulators appear largely satisfied with the industry’s recent improvements. In an email to *Fortune*, CPSC spokesperson Patty Davis wrote approvingly of the 2017 data that “showed statistically significant declines in hospitalization rates and in [emergency-department] visits per product sold”—the same numbers P&G cites—though Davis also noted that the commission wants to keep working with the safety standards group “to reduce the unreasonable risk of ingestions.”

State and federal legislators may try to crack down more firmly. Aravella Simotas, a former lawyer who now represents a Queens district in the New York State Assembly, recalls her alarm a few years ago when her then 1-year-old daughter picked up a Tide Pod that had fallen on the floor. “She was looking at it very closely,” says Simotas, who grabbed it before her daughter could get hurt. “You have to understand, my child never put anything in her mouth.” In February 2018, Simotas and Brad Hoylman, a state senator from Manhattan, sent a letter to P&G calling on the company to change its designs and threatening to press for legislation that would ban all laundry detergent pod sales in the state “unless pods are designed in an opaque, uniform color; not easily permeated by a child’s bite; and individually enclosed in a separate child-resistant wrapper” with a warning on it. In a phone interview, Hoylman references the Tide Pod Challenge: “I’m not trying to protect stupid teenagers from making viral videos about Tide Pods. I’m trying to protect young children.”

If New York were to pass a bill, of course, its scope would be limited to one state. Legislative action at the congressional level is something consumer advocates aren’t counting on, since the odds of a laundry-pod bill being passed by a Senate that’s skeptical of regulation, and signed by a President who has vowed to reduce the regulatory burden on companies, seem slim.

It’s too early to tell whether private lawsuits could move the

needle further than the government has. Richard Schulte, an attorney with Wright & Schulte who is bringing legal claims on behalf of the Mancillas and Powers families, says his firm is attempting to reach settlements with P&G outside the court system on 70 cases. He says the firm has resolved all of its claims against other pod manufacturers out of court.


The main reason there aren’t many lawsuits against pod manufacturers, Schulte says, is that most lawyers don’t know how dangerous the product is. “When I tell other top trial lawyers, confidentially, that I’m bringing claims against the pod manufacturers, they look at me like I’m a martian,” he says. Furthermore, most pod-related cases involve injuries that are not life-threatening and thus won’t command large payouts if they win.

P&G declines to comment on whether it has paid any out-of-court settlements. Tellingly, P&G has never mentioned Tide Pod litigation as a business risk in its 10-K filings, going back to 2012, the year its pods were launched. (In contrast, Johnson & Johnson’s latest 10-K has a long section on liabilities that describes, among other things, the financial risks incurred through lawsuits that have linked J&J’s talcum powders to cancer.)

That leaves the court of public opinion, where P&G will presumably suffer only if it’s perceived as not putting the safety of its customers first. Pod sales growth has slowed at P&G since the product’s heady early days, but sales were still up 4.4% year over year in 2018, at \$1.17 billion, per Euromonitor, and the company’s stock hit an all-time high in early February.

Consumers, meanwhile, are left to make calculations of their own about the value of convenience versus risk. That math is still playing out in the lives of Katie and Bella Mancillas. Katie says that arguments with Bella’s father about the poisoning incident contributed to the divorce they’re going through. Only 23 years old at the time, Katie dropped out of college to take care of Bella. She is now studying to be a social worker.

Katie’s own conclusion about laundry pods: “Take the extra five minutes to pour the laundry [detergent] yourself. It’s not worth losing your children.”

If you believe you or someone you are with has been exposed to a poisonous substance, please call Poison Control at 800-222-1222 or visit www.poisonhelp.org. 



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YouTube star
Nisha Madhulika
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GOOGLE'S HOPES AND DREAMS IN INDIA

THE SILICON VALLEY GIANT OPTS FOR PATIENCE OVER PROFITS IN THIS MASSIVE BUT CHALLENGING MARKET. WHAT IT LEARNS THERE MAY BE EVEN MORE IMPORTANT FOR THE REST OF THE WORLD.

By Vivienne Walt

IT IS ALREADY DARK in the New Delhi suburb of Noida on a night in December when I arrive at the home of one of the biggest YouTube stars in all of India. Yet the person who greets me at the door defies every stereotype the word YouTuber evokes. Nisha Madhulika is a 60-year-old grandmother dressed in a long robe and sandals, with her hair tied in a ponytail. After settling me in an armchair in the living room, she plies me with home-baked cookies. “You must try them,” she says, in a voice barely above a whisper, using her son to translate from Hindi.

Given the transformation unfolding in India, it seems fitting that Madhulika, with 6.5 million subscribers to her YouTube cooking channel and 200,000 more signing on each month, has hit it big late in life and with little forewarning. That, in a nutshell, could just as well describe India’s belated embrace of all things digital. Hundreds of millions of Indians have logged on to the Internet for the first time in the past two years. The surge is owing to aggressive government policies aimed at connecting Indians online and plummeting prices for data and smartphones. About 390 million Indians are now active Internet users, almost a third of the population and twice as many as were connected in 2016, according to industry estimates. For context, that’s more Indian Internet users than all the people who live in the United States.

A generation ago, the U.S., Europe, and then China added similarly huge numbers of people to the Internet. Yet the process in those areas was steady and gradual, moving from dial-up modems through clunky Wi-Fi to mobile tech. Contrast that with India, where hundreds of millions of people have skipped the early-stage Internet altogether; many have never even touched a computer. Instead, they have started online by downloading apps and watching mobile-phone videos at a furious rate. Since 2017, Indians have begun downloading more apps than Americans do. And last year, India became the biggest consumer of mobile data on Android phones. “We have not seen this kind of user behavior anywhere else in the world,” says Rajan Anandan, vice president for India and Southeast Asia for Google, the purveyor of Android mobile-phone software. Google also owns YouTube, which started the phenomenon of user-generated video in Silicon Valley more than a decade ago and now has 245 million Indian users. “This is perhaps the world’s first video-first digital economy,” he says.

For Western companies vying to increase their slice of global

markets, India’s steep digital trajectory has proved a strong draw. Perhaps no company embodies the huge hurdles of ramping up in India, and the huge payoff it might bring, as much as Google. The company’s growth depends on finding ever more users, as advertising drives more than 80% of its profits. Given that Google and other Western giants essentially are shut out of China, no other country offers a bigger opportunity to add hundreds of millions of consumers than India. “This is one of the largest populations in the world, with an income base that is a lot lower than elsewhere, so it is challenging,” says Brent Thill, an analyst in San Francisco with investment bank Jefferies. Still, he says, with more than \$100 billion in cash, Google can spend years creating its India business without fretting over the cost. “They have an incredible asset base to use to go after that population,” Thill says.

That much was plain when I crisscrossed the country late last year, from remote villages to the vast urban sprawl of Mumbai and New Delhi, to see how Google was building its infrastructure in India, as well as how the country has become a crucial testing lab for the company. The process of scaling up Google’s India business is in full swing. But it will be both long and costly. Google declines to quantify its investment in India. “It is a lot,” says Anandan, the region’s top executive. “It is an investment we are going to make for the next 10 to 15 years, to really get people online,” he says, adding that true profitability “is long term.” Google also won’t describe the size of its business in India, but analysts peg annual revenue at \$1.3 billion, a paltry portion of the company’s \$136 billion in 2018 revenues.

The impact of Google’s work in India, nonetheless, is being felt not only in India but also far beyond, including more than 7,000 miles away, at the company’s headquarters in Mountain View, Calif. Increasingly, India is becoming the blueprint for Google’s eventual push into dozens of other emerging markets, where poverty, illiteracy, and costly but slow service have kept most people off the Internet. These include some of the world’s fastest-growing economies, like Indonesia, with 260 million people, and Nigeria, whose population is on track to overtake that of the U.S. by 2050. “We are thinking of products from scratch,” says Josh Woodward, director of product management for Google’s “next billion users” team, which the company formed in 2015 to focus on new markets. “If you were to build a product for Mumbai and not Mountain View, what would you build?” asks Woodward, illustrating the unit’s approach, which it expects to evolve over “generations.”

Google’s executives likely will not be

around to see how that question is answered. They also know there is genuine good to be done—and a ton of money to be made—by the companies that figure out how to bring Internet service to the vast numbers who still don't have it. "The big question is, What does it take to get them connected?" asks Google's Anandan. "India absolutely will tell us a lot about what it really takes."

GOOGL**E HAS BEEN OPERATING** in India for years, having opened its first non-U.S. R&D center in Bangalore in 2004. But its push to expand in the country is now exquisitely well timed. The pro-business Prime Minister Narendra Modi has made a digital revolution the centerpiece of his government. And some Indian conglomerates have been answering his call. Modi campaigned for office in 2014 on a promise of getting all Indians online. Then in 2016 he invalidated most of India's paper currency in circulation at the time, effectively pushing millions onto digital payment systems. The government also put public services like health insurance online, and it

Passengers at the Kochi railway station, one of many at which Google installed free Wi-Fi.

INDIA, WITH 245 MILLION YOUTUBE USERS, IS "PERHAPS THE WORLD'S FIRST VIDEO-FIRST DIGITAL ECONOMY."

introduced a national sales tax in 2016 that required businesses to file digital records. A national ID card now collects biometric data on every citizen.

India's digital policies have seemed dictatorial at times, and for many poorer Indians, they have been painful. But officials insist desperate measures are essential to improve an overwhelmingly cash economy, where most people pay no taxes. About a million Indians enter the job market every month, yet most people still live in rural villages, with few opportunities. "More than physical infrastructure, we need digital infrastructure if we are to grow at 9% or 10% a year," says Amitabh Kant, CEO of the government's National Institution for Transforming India, or NITI Aayog, which spearheads India's digital strategy. "If we were to go around building physical banks and physical schools, and hiring bank managers, it would take us hundreds of years," Kant says, sitting in his New Delhi office. Outside, the lobby features a statue of national hero Mahatma Gandhi meditating in a sarong, with rose petals at his feet—a subtle reminder that India's digital policies are for the good of the nation. "China took 30 years to lift the vast segment of its population above the poverty line. America took close to 100 years," says Kant. "The only way India can do this in the next 15 years is to digitally leapfrog."



That leapfrogging might have sputtered on takeoff had it not been for a decision taken by one giant Indian company, the country's biggest conglomerate, Reliance Industries. In 2011, Reliance, whose core business was oil and infrastructure, decided to build a vast broadband network, a business in which it had no experience but plenty of rivals. It had acquired a telecom company that owned mobile spectrum licenses, and it muscled in on its competitors. Barely 28 million Indians then owned smartphones. Reliance aimed to blanket India with broadband coverage, which was available only in big cities. After decades building pipelines and refineries, Reliance erected 220,000 mobile towers across India, often building more than 700 in a single day. In all, the project cost more than \$30 billion.

In September 2016 it launched the Reliance Jio telecom network, offering people free mobile data for the first six months. Indians stampeded to grab the offer. Reliance Jio signed 100 million subscribers within six months and 250 million by its second anniversary last September. Its cheap plans set off a price war and drove down India's data prices, from about \$4.50 a gigabyte in 2016 to a rock-bottom 15¢ now, cutting deeply into competitors' profits. For Reliance the pricing proved a masterstroke, establishing itself as a key phone and Internet service provider. Reliance Jio now sells \$20 phones, and it is rolling out connected devices for cars, TV monitors, and home appliances.

For India, Reliance Jio's impact has been seismic. The country went from being a digital backwater to being home to the world's biggest boom in Internet usage. Last September, *Fortune* placed Reliance Jio in the first spot on its annual Change the World ranking of companies. "If you think about it, we saw economic disparity, language inequality, and distance inequality. And that is what we fundamentally broke," says Reliance Jio president Mathew Oommen when we met at Reliance's leafy campus on the edge of Mumbai. Oommen, who is from the southern Indian state of Kerala, was previously chief technology officer for the U.S. cellular company Sprint. He says he is convinced that cheap data has forever boosted Indians' prospects, and he speaks of the results in grandiose terms. "They did not just become subscribers of connectivity. They have all become citizens of the digital economy," he says. "This was just the vehicle to fundamentally disrupt the social and economic fabric of India."

FOR GOOGLE, THE DISRUPTION is a potential gold mine. Together, Reliance Jio's network and Prime Minister Modi's policies have cracked open markets that until now have been out of reach, or too small to be worth the investment. In 2017, shortly after Jio's launch, Google created its first-ever digital payments app, Tez, seizing on the



From left: Rajan Anandan, Google vice president for India and Southeast Asia. Sole Vuha and Asha Seelam in Pamula Lanka village; Asha's family recently acquired Internet access at home with the purchase of a smartphone. Mathew Oommen, president of Reliance Jio, which has invested aggressively in Internet infrastructure and services.

millions of Indians who were suddenly making digital payments. Last year it renamed the app Google Pay, and it now has about 40 million monthly active users in 29 countries, including the U.S., with about \$60 billion in transactions in 2018, according to Google.

That is not the only instance in which Google unexpectedly has found a global market for apps it designed or tweaked specifically for India's particular challenges: Patchy Internet connections, new users who speak only indigenous languages, and a high rate of illiteracy. Another is Google Maps, which launched in the U.S. in 2005. Its limitations in India were profound. Thousands of Indian roads have no official street names, and if they do have names, locals do not know them. "We literally had to draw up the maps ourselves," says Caesar Sengupta, who is based in Singapore and runs Google's "next billion users" team. Sengupta says Google decided to map India in the way people speak. Now, if you walk around New Delhi, Google Maps might give you directions like "Turn left at the first pillar, right at the hospital, then right again at the school." (That innovation, too, has been ported to the developed world, where Google Maps makes references to landmarks, like the



corner drugstore.) Indian drivers also know that directions depend on which kind of vehicle you are in. So Google engineers tweaked Maps for the country's three-wheeler scooter taxis known as auto-rickshaws, offering them routes that would not work for cars.

To get millions of Indians using Google Maps on their often erratic Internet connections, engineers tweaked the app to allow users to download directions and follow them off-line. Now you can use Maps off-line anywhere in the world. (Google also offered the first off-line version of YouTube in India, in 2015, an option now available in 80 countries.) "There was a time when people had paper maps," Sengupta says. "Today you walk around India and see everyone using Google Maps because they work off-line."

There is another reason for the popularity of Google Maps in India: It gives directions in 10 of India's 50 or so local languages. So, too, do Google Search and other apps. That required Google engineers in Silicon Valley to design keyboards from scratch, since several Indian languages had never before been typed on any computer or phone. "There were no databases at all for these languages," says Daan van Esch of Google's speech technology unit in California. Google dispatched its staff to remote corners of India to record 120,000 phrases in local languages and then feed the recordings into algorithms, using machine-learning technology to turn voice into text. The feature caused a sensation in India and has since launched in other countries. Van Esch says many people's responses are deeply

GOOGLE MAPS IN INDIA GIVES DIRECTIONS THE WAY PEOPLE SPEAK, LIKE "TURN LEFT AT THE FIRST PILLAR."

emotional, after years of feeling that the Internet was something for others but not for them. "I went to India in 2017 and demonstrated a keyboard in Manipuri," the dominant language in northeast India, he says. "People hugged me afterward and said, 'At last, my language is online.'"

Google also has designed solutions to problems that originate from competitors. One example is Google's Files app, which allows users to clean out unread or repetitive emails and messages. Launched in 2017 in India, Files now has about 30 million users globally. But Files originally was created to tackle a uniquely Indian headache: the millions of good-morning messages sent daily on WhatsApp, which is owned by Facebook and has about 200 million active users in India. Countless thousands of Indians send WhatsApp messages to all their contacts at dawn every day, reading "Good morning!" and embellished with flowers and inspirational phrases. Google scientists trying to understand why smartphones kept freezing in India finally traced the problem to the good-morning blitz. Apparently unaware of people's irritation, Prime Minister Modi complained to lawmakers in 2017 that almost none of them responded to his daily good-morning greetings. Instead, a more decisive response came from Google engineers, who designed the Files app. Now people can delete the messages with one swipe. Sorry, Mr. Prime Minister.

EVEN WITH THIS PROFUSION of new products, Google will need to wait years for its India operations to be profitable. Despite the rocketing numbers of Indian Internet users, reaching that pot of gold will be difficult and will need a sizable expansion of India's middle class.

"Everyone recognizes that India is where the next billion users are coming from," says Nikhil Pahwa, founder of the MediaNama tech-news portal in New Delhi. "But India is not where substantial revenue will come from," at least not yet. "Companies are looking at it from a 20-, 30-year horizon, not 10 years."

In a way, Google is fortunate its India strategy so far has downplayed profits. Prime Minister Modi is pushing a "national champion" e-commerce directive that already has stymied Amazon and Walmart. What's more, by focusing at least implicitly on helping rather than on commercializing, Google is trying to spread goodwill, both among the Indian populace and within its own ranks. Among executives on the ground, there is a palpable sense that they are doing good.

Elsewhere in the world, Google is increasingly at odds with various antagonists, from human rights organizations peeved that Google might censor its search engine in China to European regulators who have fined Google billions of dollars over antitrust concerns. Google isn't immune from scrutiny in India, either. In mid-February, Reuters reported that Indian antitrust authorities are investigating Google for alleged abuses on its Android mobile operating system.

Even so, executives in India still bubble over with "Googley" enthusiasm. "The power of the Internet is you suddenly get ideas about what you can do," says Anandan, the regional chief, sounding like a voice from a time before the word "techlash" became fashionable in Silicon Valley. He tells anecdotes about Indian villagers selling their crafts online and families in remote areas logging on to education sites. "We are in day zero of what the Internet can do in the world in a very positive way," he says.

Google's efforts to do good also hold the potential for it to do extremely well. In 2014 it launched Google Station, in a partnership with India's national railway service, to install Wi-Fi hotspots for the 23 million or so people who ride trains every day. It has since installed hotspots in 400 Indian train stations. Recently, Google launched a similar service at bus stops in Mexico and public squares in Lagos. The beneficence has benefits. When users log into a Google Station hotspot, a portal sucks up their data and allows Google to post ads on a dedicated web page. Google executives nevertheless describe the project in borderline philanthropic terms. "It is a fantastic way to connect," Sengupta says.

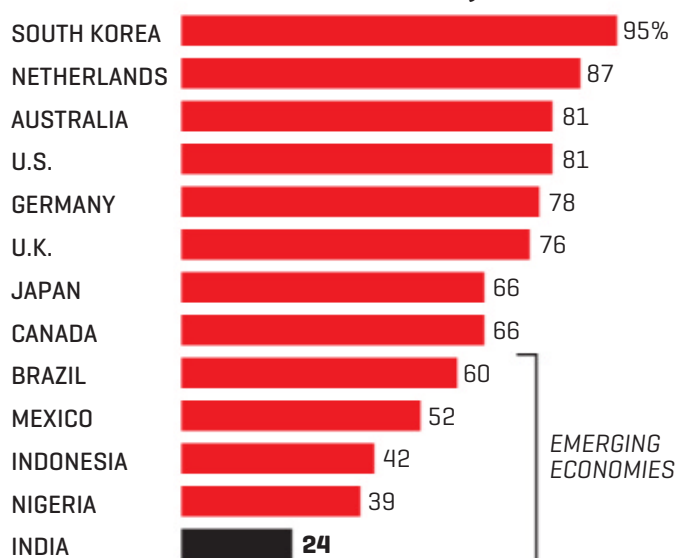
Some of India's poorer workers take advantage of the free, fast Wi-Fi. One afternoon in the crowded train station of Kochi, the main city in India's southern state of Kerala, M.R. Manikandan, a 40-year-old porter who has worked there for 10 years, tells me he recently used Google Station to download sample exams for his wife's civil service test. "She passed," he says happily.

Google's yearning for new users fortuitously overlaps with its charitable efforts. Indeed, it has become famous in India for its program of Saathis—the Hindi word for friend—which it launched in 2015 to help draw more women online. Women

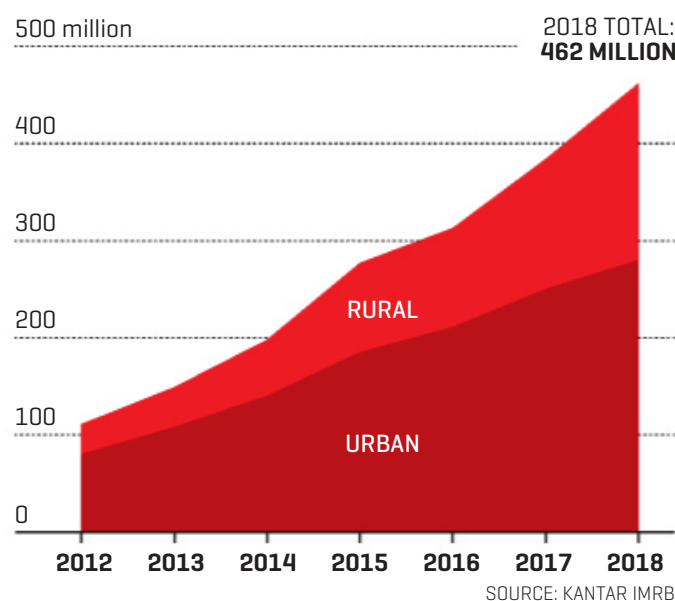
India's Online Opportunity

Plenty of upside remains to get users in India connected.

ADULTS WHO OWN A SMARTPHONE, 2018



ACTIVE INTERNET USER POPULATION IN INDIA



make up a small percentage of Internet users in the country.

Google partnered with Tata Trusts, the philanthropic arm of India's manufacturing and retail conglomerate, and recruited about 60,000 so-called Saathis, all women, in more than 200,000 villages across India, to teach other women how to get online. Google trained the Saathis and gave them each a smartphone, while Tata pays them a stipend of about \$40 a month, according to one Saathi I spoke to in the tiny village of Thotlavalluru in Andhra Pradesh state in eastern India, near the Bay of Bengal. Google claims the Saathis have so far trained about 22 million people, mostly women, in basic skills like how to make WhatsApp calls and pay bills online. It aims to reach about 300,000 villages by the end of this year. Several Saathis and their trainees have seized the chance to start cottage industries with their new Internet skills, download-

ing instructional videos on YouTube on how to make homemade honey or embroider shirts, for example. One afternoon in Thotlavalluru, several women gathered outside the Hindu temple of the village to show me their wares. “I learned how to decorate bangles with thread and stones on YouTube,” says Parveen Begum, 32, whose husband, a devout Muslim, did not permit her to work outside the house. She now sells her bangles to local clients. “Women come to my house to learn the Internet,” she says. “I will train about 1,200 people in the end.”

WHETHER OR NOT GOOGLE makes one rupee of profit in India, it is in villages like Thotlavalluru, deep in rural India, that the Internet is most transforming lives—and in the process, India itself, as the outside world finally begins to pierce remote, isolated areas. At dawn one morning, in the tiny village of Pamula Lanka, a few miles from Thotlavalluru, I stand amid fields of sugarcane, with buffalo loping by, when Asha Seelam, 13, and Sole Vuha,

Parveen Begum, a Google Internet “Saathi,” or friend, in the eastern village of Thotlavalluru.

15, come pedaling down the dirt path on their way to school, braids bobbing behind them, and skid to a halt in front of me. “Are you American?” they ask with wide eyes, hopping off their bikes in wonder at the sight of a foreigner in their tiny village.

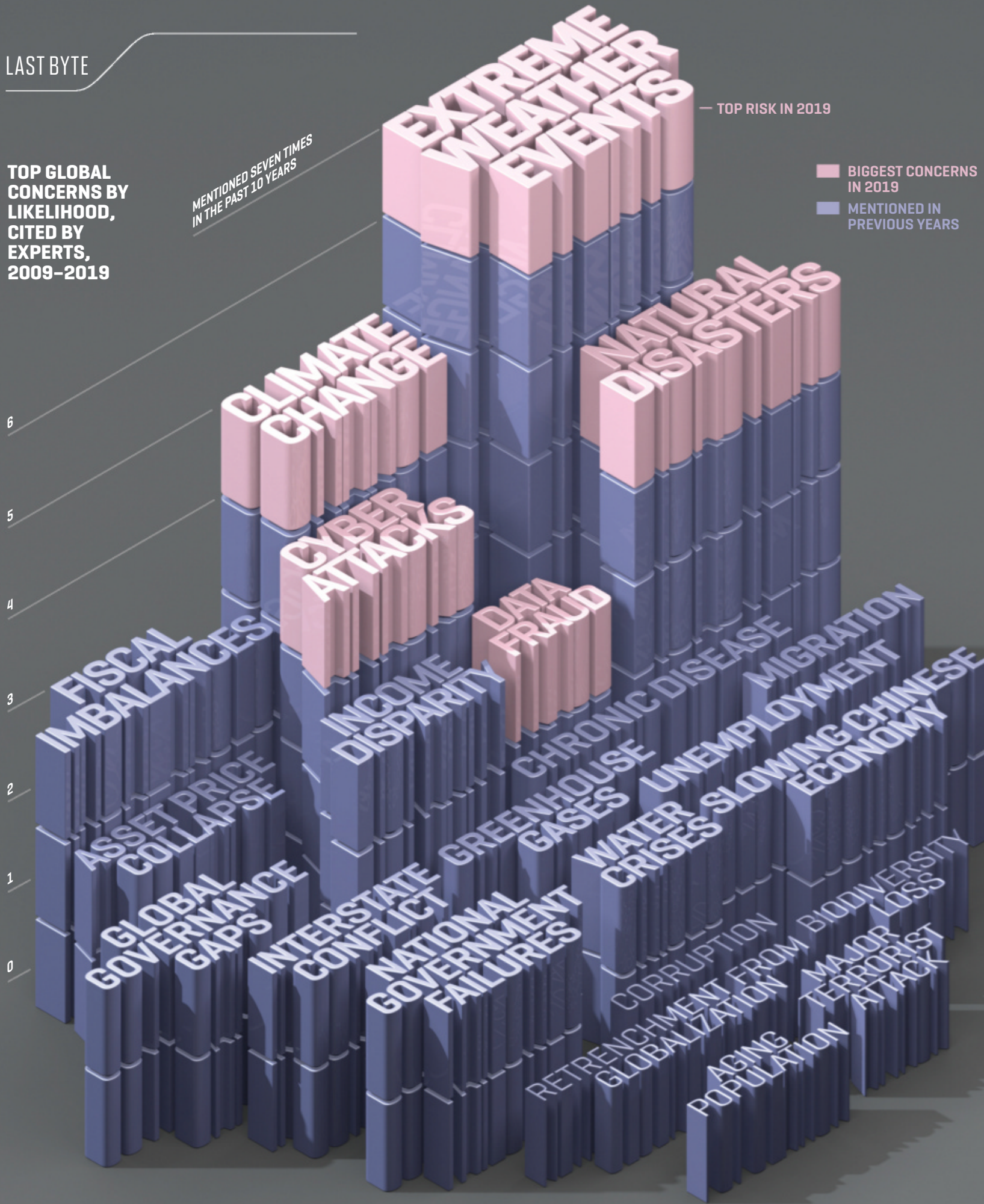
The conversation quickly turns to an exciting new event: The arrival of the Internet at Asha’s home the previous month, with the family’s purchase of its first smartphone. “I like to chat with my friends on WhatsApp,” Asha says, explaining that she knows enough English to use the messaging app, but that her parents, who speak only the local Telugu language, need her help to communicate online. Since her parents had first logged on to the Internet a few weeks earlier, “they know some information about villages and cities, even in America,” she says with amazement. “They use Google to find information.”

When I visit her small home that afternoon, her mother, Seelam Venkateswaramma, 36, who teaches in the one-room village schoolhouse, tells me she uses Google Maps to check distances to Hindu pilgrimage sites. Her greatest thrill since getting connected in November has been watching an Indian movie on YouTube, in Telugu, starring local heartthrob Vijay Deverakonda.

Forget the fact that Asha’s father, a farmer, and her mother together earn \$800 a year and present no commercial value to Google. For now—and perhaps for years to come—the family is logging on to free sites, not shopping for vacations or clothes. But to Google and other tech companies, families like Asha’s are living proof of a phenomenon that they believe is so unique and so big that it merits trying all means possible to seize its potential. ■



TOP GLOBAL CONCERNS BY LIKELIHOOD, CITED BY EXPERTS, 2009-2019



WHAT SCARES THE WORLD

EACH YEAR, THE WORLD ECONOMIC FORUM asks business leaders and other experts which major threats they believe countries are most likely to face in the coming decade. In the latest report, the top three global risks concern the environment and climate change—with destructive weather leading the pack for the third year in a row. For Americans, it seems, that threat is already here. Last year there were 14 weather disasters in the U.S. with losses topping \$1 billion each—from Hurricanes Florence and Michael to the devastating California wildfires. That’s more than twice the annual average from 1980 to 2018. —CLIFTON LEAF

NOTES: THE "NATURAL DISASTERS" CATEGORY HAS BEEN MERGED WITH "STORMS AND CYCLONES"; "FAILURE OF NATIONAL GOVERNANCE" INCLUDES "STATE COLLAPSE OR CRISIS." SOURCE ON WEATHER DISASTERS: NOAA



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