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June 17, 2019

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How to Create a Compelling Handout for Your Next Presentation

It's easy to spend all of your presentation time focused on slides, but the most effective meetings also include a handout for attendees. A well-designed printed piece gives them something they can physically carry away. The tangible takeaway enhances your audience's ability to grasp information and provides an easy reference if they want to contact you in the future.

"If I'm presenting a more complex argument, the handout is providing a complementary way for me to plant my argument in your brain," says Tim Pollard, founder and CEO of Oratium and author of *The Compelling Communicator*. "You're getting it auditorily, and then you see it summarized with your visual cortex. To make it sticky, it has to engage more than one part of the brain. Plus, the handout is the single biggest driver of whether the original hearer can retell the story later, which is critical to most messaging."

A smartly crafted handout is key. Printouts of your slides certainly help, but they may not add much value for attendees. Instead, tailor the handout to suit its purpose.

Here's what to keep in mind:

If you need to close a sale: Create a standalone document

Most potential clients won't make an immediate decision at your meeting, and they often need to convince other stakeholders back at the office. Your handout has to help them make that case.

The handout should include an actionable summary of the problem being solved; information about the solution you offer; and a call to action that includes your contact details. If possible, share some of the information visually, since text-heavy pieces can be intimidating.

If you're interpreting complex data: Use a "data placemat"

Veena Pankaj, a Director at the Innovation Network, uses data placemats to help facilitate structured conversations around data findings. Each 11" x 17" sheet of paper has charts, graphs and quotes around a specific theme or topic that she's discussing with clients. Attendees can take notes directly on the placemats.

"I like their tactile nature," she says. "It provides stakeholders with an opportunity to really engage with and think critically about the data."

If you want to promote a product or brand: Get creative

Build an exercise or game into your presentation that requires the audience to use the handout to participate. This can be as simple as a worksheet with prompts for idea generation or mind mapping. The more creative you can get with these, the better.

At a recent breakfast for consumer bankers, for example, the credit scoring company VantageScore distributed branded bingo cards filled with keywords from a presentation on its new product. Attendees could mark the card every time they heard a keyword, and call out "Bingo!" for a prize. Participants had a blast, and the presentation stood out from others at the conference, says Jeff Richardson, VantageScore's Vice President and Group Head, Marketing and Communications.

"The keywords were strategically selected so that people would remember our brand and our differentiators, whether they were thinking about the game or dialed into the presentation content."

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Bloomberg Businessweek

June 17, 2019

◀ Comcast scion Tucker Roberts kicks back at the Philadelphia Fusion's team headquarters in Venice, Calif.

PHOTOGRAPH BY JESSICA CHOU FOR BLOOMBERG BUSINESSWEEK

FEATURES

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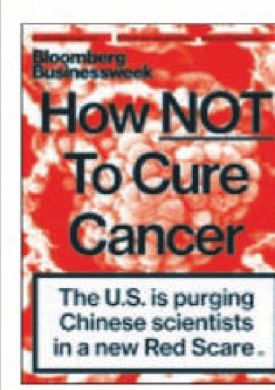

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■ IN BRIEF

By Benedikt Kammel

● United Technologies and Raytheon plan to join forces, creating an aviation and defense giant with about

$70b

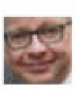
in sales. Their range of products will include jet engines, missiles, cockpit electronics, and cybersecurity services.

● **President Trump threatened China with tariffs on an additional $300 billion in imports.**

Trump hopes to pressure Chinese President Xi Jinping to meet with him at the G-20 gathering in Japan later this month. This latest trade salvo came just days after the U.S. called off proposed levies on Mexican imports.

● Protesters in Hong Kong braved tear gas and rubber bullets on June 12 in the standoff over a bill that would allow extraditions to mainland China.

● The list of candidates hoping to succeed Theresa May as Conservative Party leader and U.K. prime minister swelled to 10 before the first round of voting. Boris Johnson, the former foreign secretary, is favored to come out ahead when rank-and-file Tories vote in late July.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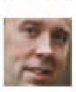
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Mark Harper


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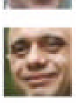
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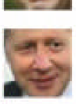
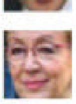
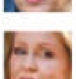
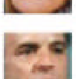
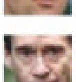

Boris Johnson


Andrea Leadsom


Esther McVey


Dominic Raab


Rory Stewart

● Hudson's Bay Chairman Richard Baker is making a cash bid valued at about

$1.3b

to take the beleaguered Canadian retailer private following four successive years of sliding share returns.

● **Two executives at a top Lloyd's of London agent resigned over allegations of sexual harassment.**

The alleged incidents came to light after a March *Bloomberg Businessweek* article about endemic sexual misconduct at the insurance market. On June 12, a second Lloyd's agent suspended two employees.

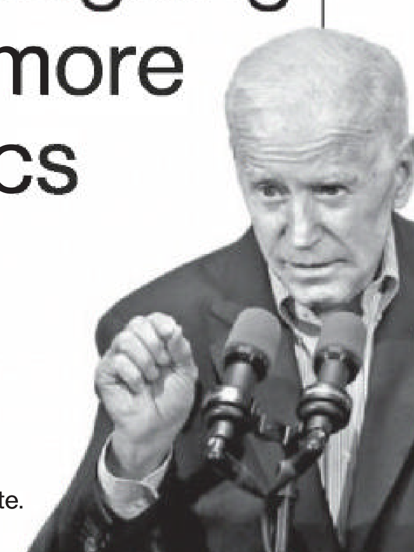
● Deutsche Bank's investment bank head Garth Ritchie was among about 80 current and former employees ensnared in a probe of alleged tax fraud. Ritchie said he wasn't personally involved in the activity in question and that the investigation would find no wrongdoing by him.

● *Salvator Mundi*, the masterpiece attributed to Leonardo da Vinci that sold in 2017 for a record

$450m

has resurfaced in an unlikely location, according to Artnet: on board the superyacht *Serene*, which is owned by Saudi Crown Prince Mohammed bin Salman.

● **"The cashiers at Target see what's going on—they know more about economics than Trump."**



Joe Biden, the front-runner for the 2020 Democratic nomination, slammed the president's trade policies as destructive during a rally in Iowa, a key early-voting state.

● Amazon.com was named the world's most valuable brand in the annual BrandZ ranking, beating Apple and Google.

● Global carbon emissions jumped the most in seven years in 2018 as energy use surged, according to a review by BP.

● Kazakhstan elected Kassym-Jomart Tokayev, its first new leader since 1989, in a vote marked by street protests.

● Martin Feldstein, a Harvard economist and chairman of the Council of Economic Advisers from 1982 to 1984, died at 79.

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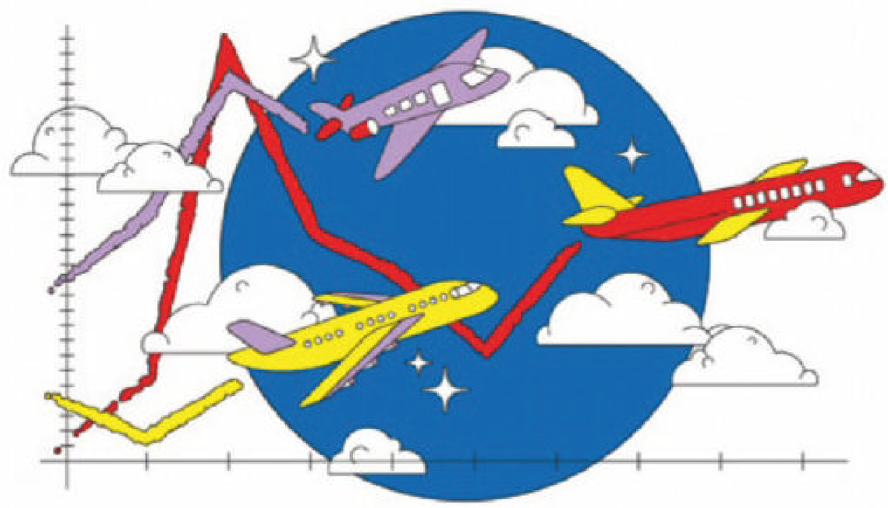

▶ Boeing Has Its Work Cut Out in Paris

The Paris Air Show starts on June 17. Typically an event for major aircraft orders, this year's show is overshadowed by the grounding of the Boeing 737 Max following two deadly crashes. Can the U.S. company rebuild trust at the expo, or will archrival Airbus dominate?

▶ The Federal Reserve discloses its rate decision on June 19. A cut in the near future is looking more likely amid trade tensions and a slowdown in U.S. hiring.

▶ The Bank of Japan announces its rate move on June 20. Some economists predict the nation's economy will shrink in the second quarter.

▶ The European Council meets for its quarterly two-day summit on June 20, the first gathering since parliamentary elections were held last month.

▶ The Cannes advertising festival begins on June 17. Facebook and YouTube are under fire from marketing executives about the spread of hate speech.

▶ The 12th U.S.-Africa business summit convenes in Mozambique on June 18-21 to discuss topics including agriculture, energy, health, and finance.

▶ Grab your top hat and picnic basket and head to the Royal Ascot horse races near London from June 18, where you may catch a glimpse of the Queen.

BLOOMBERG OPINION

Don't Abandon Sudan

● The U.S. and EU should put the generals on notice and demand justice for murdered protesters

Hope for democracy in Sudan hangs by a thread. On June 3, the generals running what's meant to be an interim administration unleashed paramilitary forces on a peaceful sit-in in Khartoum, killing at least 60 people. Crackdowns in other parts of the country increased the toll.

The generals announced they were scrapping agreements for a transition to democracy that had been negotiated with the protesters who brought down dictator Omar al-Bashir in April. Instead, the Transitional Military Council has said it plans to hold elections within nine months. The brutal attack shows that the generals can't be trusted to oversee this process.

The world has seen this movie before. The killings in Khartoum may not have matched the scale of the 2013 massacre of protesters in Cairo, which likely claimed more than 1,000 lives, but the parallels are all too clear: Another military elite is using deadly force to try to take back the political space won by a pro-democracy movement.

U.S. National Security Adviser John Bolton was right to condemn the killings as "abhorrent." China and Russia have blocked an attempt to denounce them at the United Nations Security Council—but the U.S. and the European Union can still coordinate efforts to get Sudan's transition to democracy back on track. The U.S. and EU should start by demanding that the generals relent, and they should call for those involved in the shooting to be brought to justice. They should oppose the generals' plan to force through elections, which in all likelihood is meant to buy time to consolidate power and slacken the pro-democracy movement. Instead, they should insist on a civilian-run transitional authority.

The protests that took down Bashir brought together a wide range of individuals, from politicians and lawyers to activists and students; Sudan isn't lacking for civilians who can manage such a transition. The U.S. and Europe should stand ready to assist them and, eventually, to help coordinate internationally monitored elections.

The military council's leadership should be told that failure to hand over the reins could lead to sanctions for human-rights abuses and other violations, including penalties under the Global Magnitsky Act. If the soldiers do return peaceably to their barracks, they should be offered leniency in any post-election reckoning of their behavior during Bashir's rule and its aftermath.

Sudan's allies can also help. Since Bashir's ouster, the generals have courted Egypt, Saudi Arabia, and the United Arab Emirates. All these countries should endorse U.S. and European efforts to ensure that the generals don't block the path to democracy and make it clear they'll get no help if they cling to power. The world failed Egypt in 2013. It shouldn't fail Sudan now. Ⓑ

Written by the Bloomberg Opinion editorial board

ILLUSTRATION BY ALICE MONVAILLIER


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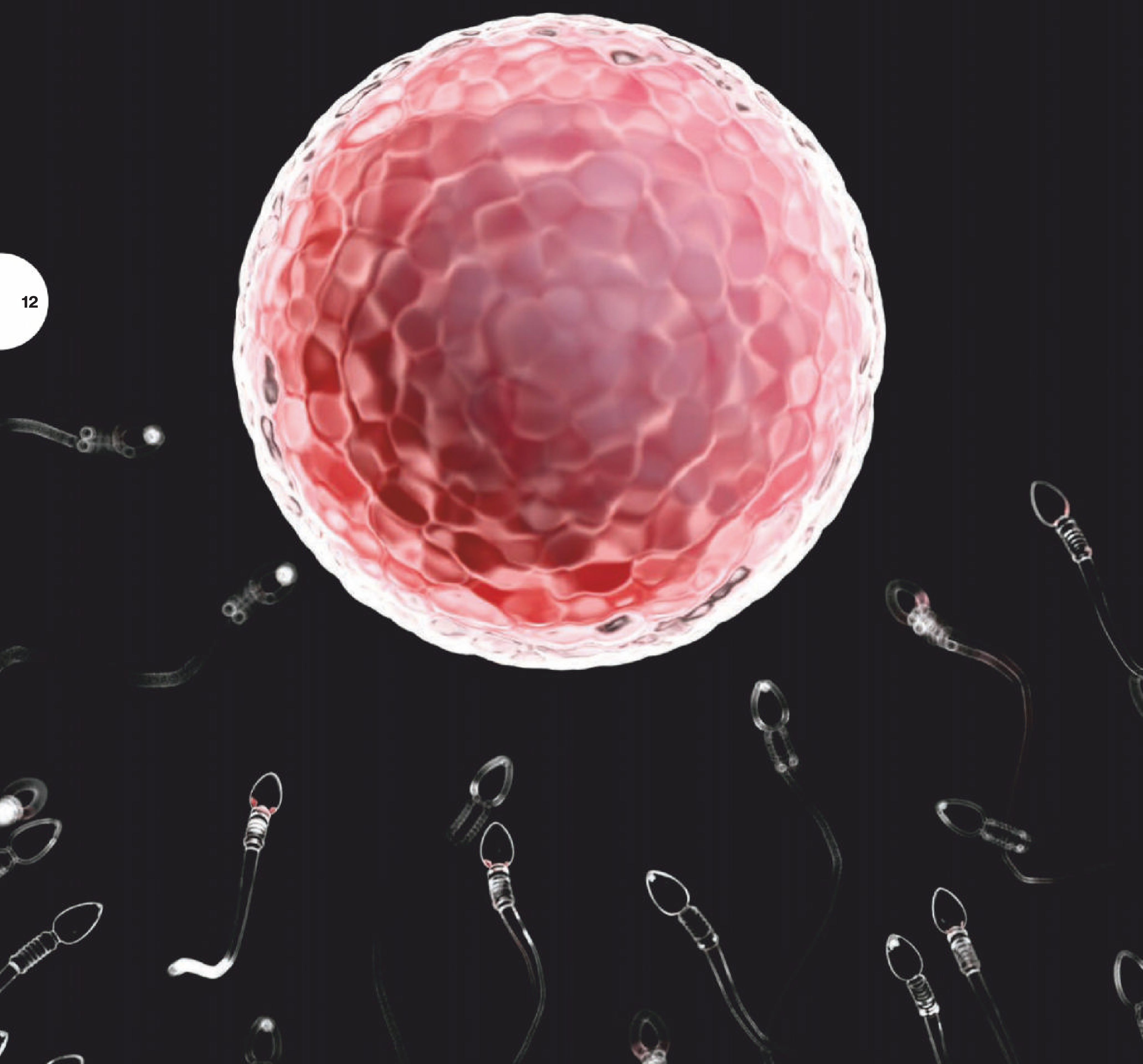
How to Freeze Your Salary



● Anti-discrimination laws haven't relieved the relentless pressure to devote more hours to the office

● By Claire Suddath

Nilab Tolton had been working as an associate at the international litigation firm Jones Day for five years when she learned she was pregnant. Looking back, Tolton says she knew but also didn't know—at least not in a conscious, articulable kind of way—that having a kid was going to complicate her goal to make partner. Women make up half of Jones Day's junior associates but only a quarter of its partners. (Jones Day has represented Bloomberg in a number of employment-related matters.) The century-old firm boasts a client list—Toyota, Starbucks, General Electric—that looks like the S&P 500 and demands the kind of round-the-clock attention from employees that only single people or those with a stay-at-home spouse can easily give. But Tolton had landed at Jones Day straight out of Harvard Law School for a reason. She wasn't afraid of long hours. She was willing to do the work.

"In my eternal optimism, I took the lack of female partners as an opportunity rather than a signal that I'd meet the same fate," Tolton says. She spent her pregnancy pulling all-nighters and working through the weekend to preemptively make up for the 5½ months of maternity leave that some of the male partners jokingly referred to as her impending "vacation." For a while, her efforts seemed to pay off. "Holy cow! … You're not supposed to be that smart at 9.5 months pregnant!" one partner wrote in an email after Tolton, who'd started her maternity leave, sent him her latest work.

She was still on maternity leave in June 2016 when Jones Day notified her it was freezing her salary. She was shocked. "The only time I'd heard of someone getting their salary frozen was after a male associate called female associates c--ts at a work event. There was an HR investigation. He almost got fired. Instead, they froze his salary," she says. Tolton couldn't figure out what she'd done to deserve this kind of punishment. She printed out copies of all the "great job!" and "excellent work!" emails she'd received over the past year and pressed her superiors to point to specific criticisms in her annual review to explain their decision. They told her to drop it—the freeze was a done deal. After her second pregnancy and maternity leave a year later, Tolton says, her salary was frozen a second time and she was told to look for a new job.

In April she and five other former employees filed a lawsuit against Jones Day alleging gender and pregnancy discrimination. Their complaint is rife with scandalous anecdotes: a male partner who told female summer associates that he wouldn't offer them positions at the firm unless they danced and sang to a Care Bears song at a firm event; a "Lawyerly Ladies Lunch" that Jones Day advertised with a 4-foot-tall cardboard cutout of a lipstick tube. One plaintiff, who remains anonymous, says that when she asked about a dearth of female partners at the firm, a male partner said it was because "women have babies and stay at home." The most troubling accusations come from Tolton and a second plaintiff, both of whom got pregnant, went on leave, and were told to leave the firm. Jones Day declined a request for comment, but a public response on the firm's website provides several statistics that it says "belie the recent claims of six former associates." (There are 240 female partners at Jones Day; 42% of associates promoted to partner in January 2018 were women.) The firm plans to litigate the case in court.

Jones Day is just one of several companies facing pregnancy discrimination lawsuits. In the past few years, tens of thousands of women have come forward with complaints against companies such as Whole Foods Market, Walmart, 21st Century Fox, and, more recently, Netflix, where a former manager alleges that after she'd told her boss she was pregnant, he removed her from a show she was working on. She says she complained to HR and was fired the next day. (A Netflix spokesman says the company has investigated the matter and found the claims to be meritless.) The Jones Day lawsuit comes after another gender discrimination suit filed last year that focuses on the firm's "black box" compensation plan, in which employees' salaries are determined in secrecy. The suit alleges this leads to widespread pay discrepancies between women and men. "These issues are all related," says Deborah Mancuse, the employment attorney representing Tolton and other Jones Day employees in both cases. "It has to do with the way women are valued. Their pay, their promotions, the stereotype that a pregnant woman—or mothers with kids—are not going to work as hard, it's all ways in which women are undervalued and undercompensated for their work."

The reasons women are undervalued are complicated, and the problem defies an easy solution. It's clear, though, that anti-discrimination laws aren't enough. The Pregnancy Discrimination Act of 1978 made it illegal to fire an employee—or demote her, refuse to hire her, or treat her differently—just because she's pregnant. Talk to working mothers, and you'll quickly discover the difference between what the law says and how often it's actually followed. The PDA, as it's known, is more than 40 years old, yet women still talk of bosses who refuse to accommodate medical complications. Big projects that culminate after their due dates get reassigned to someone else. Promotions that seemed within reach are suddenly not a good idea right now. "At my old job, my boss pointed to me, in a room full of people, and said I wasn't a candidate for an open position 'because you're not done having babies yet,'" says Murphey Sears, an executive at a Dallas nonprofit who was pregnant with her second child at the time, in 2014. Women who make a living from freelance or contract work worry they'll no longer attract clients. "I can't walk into a meeting for a six-month contract and be six months pregnant. I don't think anyone would hire me," says Molly Magnifico, ▶

GETTY IMAGES

◀ a marketing consultant in Seattle. Magnifico is currently pregnant; to keep working, she's teamed up with other consultants on projects that extend past her due date.

Even cases that appear to be cut and dried can turn out to be legally complicated. In 2015 a Minnesota orthodontist's assistant, Nikki LaPoint, had a job offer rescinded after she told the orthodontist she was pregnant. In court, LaPoint produced voicemails in which the doctor asked why she didn't mention her pregnancy during her job interview, which she didn't legally have to do. "And when we went into discovery we also found that [the doctor] wrote, 'Pregnant?' with a question mark, on the application," adds Steve Smith, LaPoint's lawyer. "Rarely do you get that kind of direct evidence of discrimination." But the Minnesota Supreme Court didn't see it that way. It determined that LaPoint lost her job offer not because of her pregnancy, but because of her request for 12 weeks of unpaid maternity leave, to which she wasn't legally entitled.

The cumulative effect of sidelining pregnant employees damps their economic power. You see it in women's average earnings relative to men. In the U.S., women and men with the same educational background and level of experience start their careers earning about the same salary. But by the time they hit their 30s, women's earnings have fallen behind. "It's particularly bad among married men and women, which indicates that something is going on beyond just women's slower promotions in general," says Sari Kerr, an economist at Wellesley College. "If you narrow down more finely, you find women with young children really start lagging down in earnings." Several recent studies published by the National Bureau of Economic Research estimate that when women have kids their lifetime earnings drop 14% to 33%.

Few of the recently passed abortion restrictions in the South and Midwest came with maternity leave provisions. Alabama has all but banned abortion but guarantees women no paid or unpaid leave. Instead, the state relies on the Family and Medical Leave Act, a federal law that grants employees 12 weeks of unpaid leave but applies only to full-time workers who've been employed at a large company for more than a year. Women in Alabama on average make about 24% less than men.

Men don't face this financial penalty. Instead, they benefit when they have kids. "We actually see a salary bump," Kerr says. But there's a flip side to this fatherhood bonus. When men become fathers, they're expected to keep working as long or as hard as before. Fewer than 20% of men in the U.S. get any kind of paternal leave after they have kids. By forcing new fathers to keep working, companies are effectively leaving women to navigate the earliest days of parenthood on their own. Even the most egalitarian couples find themselves falling back on traditional gender roles that are hard to break after a mother returns to work. JPMorgan Chase & Co. recently settled a lawsuit by a male employee who was denied the company's 16 weeks of paid parental leave because, the bank said, his wife was the "primary caregiver," not him. JPMorgan's policy, like those of many companies, is gender-neutral on paper yet still assumes that families have a "primary" parent who's going to be doing most of the work. According to the Bureau of Labor Statistics, 89% of married women still do the majority of the housework, cooking, and child care regardless of what kind of job they hold. Juggling all that means women can't put in the kind of 80-hour workweeks a place like Jones Day expects, so fewer of them make partner. Of course, there's a difference between acknowledging a problem and actively making it worse.

"I can't walk into a meeting for a six-month contract and be six months pregnant. I don't think anyone would hire me"

Giving men the option to take parental leave would be a step in the right direction but a small one. In 1974, Sweden became the first country to replace its national maternity leave program with a gender-neutral one that offered new parents six months to divide as they saw fit. Men didn't take leave; 90% of them let the mother take all six months. So in 1995, Sweden began experimenting with rules that required men to take time off after the birth of a child. Things still aren't equal, but as of 2014 most Swedish fathers were taking at least some leave, and a quarter were taking the entirety of their allotted three months.

Of course, Sweden's six months of parental leave can't do much about the other 17½ years it takes to raise a child. Even with government-funded child care, 1 in every 3 women in Sweden drops to part-time work after her first child and stays at that level for about 10 years. As a result, the country still has a pay gap: Women there make 88% of what men do, compared with 80% in the U.S.

Tolton has left Jones Day, but she's still a full-time lawyer. She's now practicing commercial litigation at a boutique firm—one she says is supportive of both her life as a working mother and her decision to file a discrimination lawsuit. When she left Jones Day, she says, other female associates approached her to ask why. Had she just burned out? Gotten a less demanding job? They too had run the numbers on the looming career-vs.-family equation and realized there just weren't enough hours in the day for them to do both. "I was honest about what happened," Tolton says. "I said my salary was frozen after my maternity leave, and they told me to find another job." She says that when her bosses found out what she said, they called her at home and told her to never come into the office again. They would clean out her desk and send any personal items. "It was, I just..." Tolton can't quite find the words. "I mean, my diplomas were still on the walls." Ⓑ

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BUSINESS

Last Man Standing

● Can Giorgio Armani, at 84, turn around a legendary company founded on a style he turned classic?

A few days after the death of Chanel designer Karl Lagerfeld in February, Giorgio Armani summoned guests to his personal museum in Milan for his fall-winter collection runway show. At the former granary wrapped in stark concrete walls, he revealed the latest lineup of his softly tailored jackets, velvet bombers, and evening gowns to the friendly nods of magazine editors, department-store buyers, and celebrity clients such as Naomi Watts. At the finale, instead of his habitual quick bow and wave, Armani took the hand of a model and paraded the length of the catwalk. The crowd cheered in amazement. Perhaps a touch of sentiment in the wake of Lagerfeld's passing contributed to the applause. Nevertheless, it was a thunderous exclamation that the 84-year-old Armani—the creative director, chief executive officer, and sole owner of his namesake company—remains a force to contend with and one of the last creative titans of the fashion industry.

"It was actually quite an emotional moment," Armani, a cautious communicator who's never mastered English, says in a written interview. His name is one of the world's most recognizable brands: a sprawling fashion and lifestyle empire

Edited by James E. Ellis and David Rocks

DOUGLAS FRIEDMAN/TRUNK ARCHIVE

producing everything including red-carpet gowns, logo swim briefs, perfumes, eyeglasses, and sleek hotels dotted around the world. Armani's aesthetic—streamlined but sensual, dressed-up and laid-back at the same time—has become shorthand for classic Italian elegance and luxury design. His savvy at exporting it to the world has helped him amass one of Italy's biggest fortunes.

But falling revenues since 2016 suggest the time may have passed for Armani's timeless style. Recent years have seen his creations fall out of fashion's spotlight. A period of ultracasual and athletic dressing has taken hold—with hoodies, sneakers, and yoga pants infiltrating many business workspaces—as social media-friendly designs spearheaded by Gucci's extravagant aesthetics seduced young luxury shoppers to the detriment of more conservative creations. The decline of American department stores and the rise of online shopping, where $3,000 tailoring is a tough sell, have also hurt. "When you've been so successful, sometimes it's difficult to realize you have to change," says Mario Ortelli, a London-based luxury consultant. "The company remains true to its DNA, but it hasn't been fast enough to target a changing customer."

The company has yet to disclose sales for 2018, but Armani said in a statement last August that he didn't expect it to return to growth before next year. General Manager Livio Proli stepped down in March and was replaced with two internal hires. Armani declined to comment on the reasons for the separation.

The company has embarked on a restructuring plan to streamline its seven labels. Midprice department-store lines such as Armani Jeans and Armani Collezioni are being discontinued and their products folded into a more manageable stable of three main labels. That could reduce customer confusion and allow for a more focused investment in digital advertising, Ortelli says.

Much like Ralph Lauren, Armani's American analogue, Armani is known for living the dream he's selling. Instantly recognizable for his white hair and deep tan, often seen in relaxed drawstring trousers and a fitted T-shirt or crew neck sweater, he cruises around posh corners of southern Italy on his 210-foot custom superyacht *Maìn*, a childhood nickname for his mother, and visits more than a half-dozen homes in Antigua; St. Moritz, Switzerland; and elsewhere, furnished with an ever-expanding menu of Armani-designed wares to ensure that everything meets his aesthetic specifications. "I admit to being a control freak," he says. "It's important that everything that bears my name is inspected through my personal lens."

As the only shareholder of his company, with a net worth of about $6.6 billion, according to Bloomberg calculations, Armani can be as fussy as he chooses. His sharp eye extends to licensing agreements: In meetings with the team managing L'Oréal SA's Giorgio Armani Beauty subsidiary, he's been known to toss out most images from a photo shoot in a matter of seconds, keeping only the one or two he finds "most Armani" for the campaign.

"He likes to make sure that everything that touches his name is consistent with his vision," says Nicolas Hieronimus, deputy CEO and head of L'Oréal's luxury division since 2011. Adds Cate Blanchett, who accepted her Best Actress Academy Award at the 2014 Oscars in a gold gown from the designer and became Armani Beauty's global spokeswoman last year, "To say he is hands-on is an understatement. I remember one fitting where he sent the seamstress out and got down and pinned the hem of my dress himself."

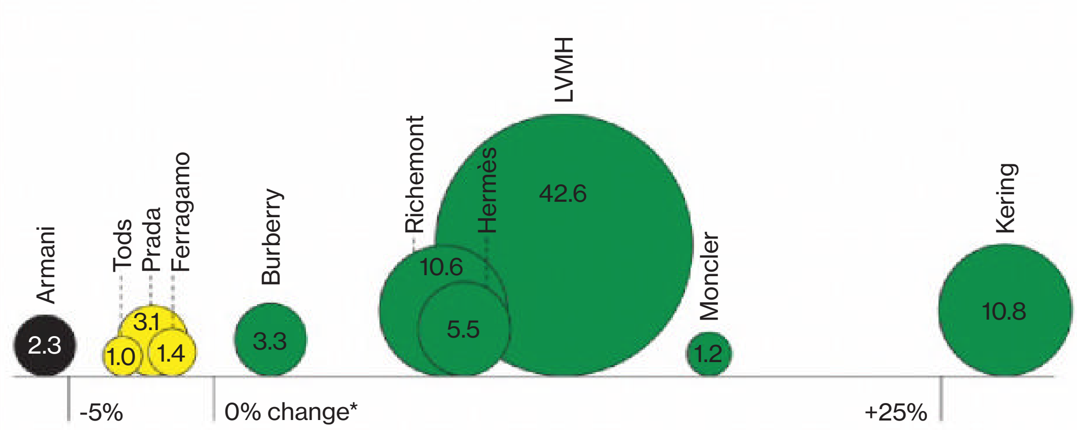
Armani got his start dressing windows in Milan's iconic Rinascente department store, becoming a menswear designer under Nino Cerruti, at the time one of the biggest names in Italian fashion. He founded his own company in 1975 with his partner, Sergio Galeotti. The big breakthrough came in the 1980s, when Armani turned his focus west—chasing opportunities to dress American stars for the red carpet and outfitting them on screen, as in the case of the mobster epic *The Untouchables*, the hit TV series *Miami Vice*, or a young Richard Gere in *American Gigolo*.

The blend of Hollywood glamour and Armani's sensual Italian aesthetic revolutionized fashion, pushing aside boxy and buttoned-up tailoring in favor of roomy suits that draped suggestively across the body. The look found female fans as well, particularly corporate women who quickly eschewed earlier strains of "power dressing" in favor of the soft but conservative lines of Armani suits. ▶

"He likes to make sure that everything that touches his name is consistent with his vision"

Luxury Makers' Diverging Fortunes

2017 revenue, billions of euros



*YEAR-OVER-YEAR, EXCLUDING CURRENCY SHIFTS, ACQUISITIONS, AND DISPOSALS. DATA: BLOOMBERG, COMPANY REPORTS

◀ When Galeotti died in 1985, Armani was forced to make what he called a "crucial decision": bring in new business partners or even sell outright so he could focus on design, or become a force in business as well as design. "I decided to embrace the challenge," Armani says. "And from that day I never looked back." He spent the next three decades crafting a total lifestyle brand, leading the luxury industry's push into eyewear, home goods, and furniture. He's opened restaurants and hotels from Milan to Dubai, where the 160-room Armani Hotel Dubai occupies 10 floors in the world's tallest skyscraper.

Whereas French luxury rivals LVMH Moët Hennessy-Louis Vuitton and Hermès built a business by snubbing wholesalers, Armani was more opportunistic, sprouting subbrands to target customers with different tastes and budgets, in different kinds of stores. His famously meticulous hand preserved the classic appeal of his high-end Giorgio Armani and made-to-order Armani Privé labels. The rise of e-commerce has muddied his message, though, as the increased visibility of more affordable products has raised the likelihood of distracting consumers. In online searches, $60 sweatpants from his EA7 leisure-wear line and even Emporio Armani jockstraps pop up before his $2,000 suits.

Armani isn't the only classic Italian brand struggling to define its space. Tod's SpA, maker of $500 suede driving loafers and staid handbags, and Salvatore Ferragamo SpA, with silk scarves and country club-friendly Vara pumps, are among the companies to see sales fall over the past two years, even as Chinese demand pushed French rivals Louis Vuitton and Gucci owner Kering SA to record highs.

But Armani's company is still growing in key fields: In cosmetics, its foundations and fragrances such as Sì Passione and Acqua di Giò cologne helped drive L'Oréal's sales. Armani had free cash flow of more than €1 billion ($1.1 billion) when it last reported earnings, in August 2018. Still, the empire is guarded about the pace of its turnaround. The company has yet to announce its results for last year and declined to make other executives available.

In the wake of Lagerfeld's death, generational issues plaguing the fashion industry are more in the spotlight than ever. Miuccia Prada, LVMH's Bernard Arnault, and other aging designers and entrepreneurs appear irreplaceable, and luxury companies have done little to clear up questions over succession. Faced with the challenge, Fendi, Bulgari, and Gucci have all sold themselves to French luxury conglomerates beginning in the 1990s, and Donatella Versace handed control last year to the American group Michael Kors Holdings Ltd. For his part, Armani—who's never married or had children but is close with a sister and two nieces, who also work with the company—has created a foundation that will inherit ownership of the company upon his death and be charged with guarding its independence and supporting social causes.

Armani continues to tack on new projects: developing a suite of luxury apartments attached to his Madison Avenue flagship store in New York and clinching a deal for Emporio Armani to outfit the Italian national soccer team. At his personal museum, where mannequins stand in clusters throughout four mostly windowless stories like guards at an emperor's tomb, Armani has tried to liven up things by hosting events to try to keep his brand relevant. There was a retrospective on the architect Tadao Ando during the latest Milan Design Week and a workshop for aspiring filmmakers led by *Call Me By Your Name* director Luca Guadagnino.

▲ Armani in his Milano studio, 1978

Armani's hunger to branch out into new activities may be responsible for the tentacled structure his company is scrambling to revise—but the diversity of his empire might also be what saves him. "Luxury isn't only about selling handbags or lipsticks anymore, it's selling a whole experience. Armani is one of the only brands that's had success getting into all sorts of different things," says Elspeth Cheung, brand valuation director at Kantar's BrandZ division. Even as sales shrank, Armani's presence in categories such as hotels as well as strength in entry-price categories such as beauty helped the value of his brand increase 5% last year, according to BrandZ. "They're providing a unique experience," Cheung says. "Armani has a very good potential to revive the brand." —*Robert Williams*

THE BOTTOM LINE As luxury goods makers cope with the internet and tilt offerings toward younger consumers, the future of classic brands such as Armani is unsettled.

Cloudy, With Little Chance of Profit

● Another bummer summer for European airlines is creating headwinds for Lufthansa

As Air Berlin slid into insolvency two years ago, Carsten Spohr spotted an opportunity to strengthen his response to low-cost carriers Ryanair, EasyJet, and Wizz. The chief executive officer of Deutsche Lufthansa AG had been seeking to make Eurowings, his budget unit, more competitive by marrying bargain-bin fares with Lufthansa's top-shelf brand name. Spohr snapped up Air Berlin planes, employees, and landing slots, but since then Eurowings has racked up almost €500 million ($570 million) in losses. This spring, Spohr halted expansion of Eurowings after soaring fuel prices and too many empty seats squeezed profits, helping drive Lufthansa's stock down 10% this year. In the company's annual report, he said integrating Air Berlin had made for an "extremely difficult" year. "We did not always live up to our premium promise to our customers and disappointed many of our passengers with delays," he said.

Lufthansa's woes are emblematic of a European industry that's facing a second straight bummer summer. Carriers are grappling with gyrating fuel prices because of U.S. tensions with Iran and the escalating trade war with China. Brexit jitters have sapped consumer confidence among Britons, spurring airlines to ponder airfare cuts to tease out shy demand. Germans face crowded airspace, jammed security lines, and strike threats. Eurocontrol, the regional air traffic authority, says there could be 40% more delays this summer than there were last.

Despite the demise of Air Berlin, Germania, Monarch, Wow, and at least a half-dozen other European carriers since 2017, too many planes still fly to too many places, making it difficult for airlines to boost profit by raising prices. Budget airfares in Germany are 10% lower than this time last year, according to the DLR aerospace center. Booking site SkyScanner says fares from Frankfurt to the Spanish holiday hub Palma de Mallorca have fallen 24% since last summer, to an average of €135, and London Gatwick to Rome averages €149, vs. €155 a year ago.

The Stoxx Europe Total Airlines index has dropped almost 15% since January, and in May it hit its lowest level in three years. Shares in Norwegian Air Shuttle ASA are off 70% this year as the carrier nurses the financial hangover from a growth binge. British Airways is digging in for strikes as contract negotiations begin. SAS faces boycotts from travelers citing Flygskam, a Swedish neologism meaning "shame about flying due to climate change concerns." Alitalia is on life support while the government in Rome seeks a buyer for the troubled carrier.

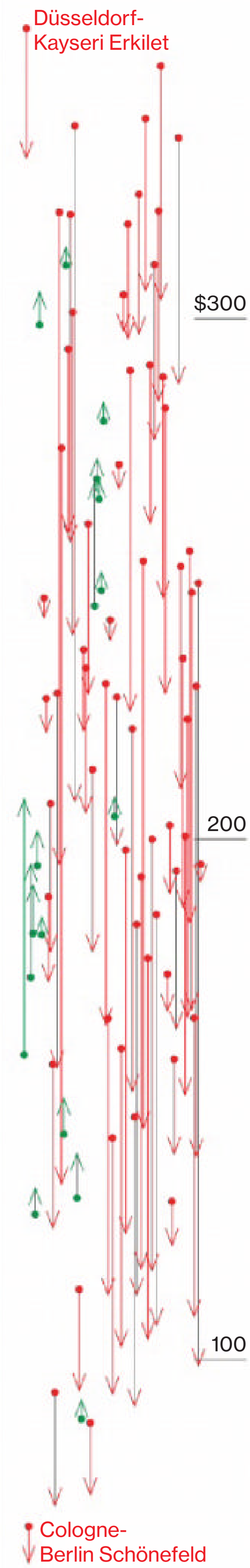
After Spohr took the top job at Lufthansa in 2014, the trained pilot introduced his Eurowings plan. Lufthansa spent aggressively on the discount unit, including €170 million integrating Air Berlin. Investors more than doubled the share price in 2017—Lufthansa's best year ever—as stock analysts praised the Eurowings strategy. Unions, though, decried it as a ploy to cut wages: A pilot at Lufthansa can earn more than €200,000 per year, while Eurowings pay is capped at €150,000, according to the website Pilot Jobs Network. With losses mounting and unions threatening strikes at Eurowings this summer, shareholders have turned against the strategy. "Eurowings has been a catastrophe," says Michael Gierse, a portfolio manager at Union Investment.

Spohr insists the situation will improve as he wraps up the integration of Air Berlin, and he says he's working to stabilize operations at the company's other brands. He's adding spare aircraft to keep things running in case of breakdowns, and he's increasing turnaround times at airports to ensure more on-time departures. "We need growth, but not blind growth," he said at the company's annual

meeting in May. "Tickets for less than €10, as offered by some of our competitors, are economically, ecologically, and politically irresponsible."

Aggravating Lufthansa's problems is German infrastructure. Cologne Bonn Airport has Europe's worst record for departures, with almost one in five flights delayed by more than 30 minutes last ▶

● Changes in average price of short-haul flights from Germany, 2016-18



◀ year, according to consumer group Flightright. At Frankfurt Airport, Lufthansa's primary hub, outdated scanners and procedures mandated by the police mean each security line can handle fewer than half as many passengers as those in Amsterdam or London, according to the German Aviation Association. Extra security gates and a terminal under construction will help, but the new facility won't open until 2021. In Berlin, Willy Brandt International Airport has been sitting empty for seven years as workers repair countless construction defects. The capital's other two airports, meanwhile, are jammed far beyond capacity.

To ease congestion, the government, airlines, airport operators, and police have agreed on 24 measures ranging from automated systems for checking boarding passes to higher-altitude flight paths. But officials warn that it will take time for them to pay off. "We're working hard to provide good travel opportunities," Transport Minister Andreas Scheuer said at a March conference where the measures were negotiated. "But we can't make everyone happy this summer." —*William Wilkes, with Richard Weiss*

THE BOTTOM LINE With strike threats, jammed airports, and too many planes flying to too many destinations, Europe is bracing for 40% more delays this summer than last.

The New Money In Old Medicine

● AstraZeneca is betting on a traditional herbal remedy to speed its expansion in China

AstraZeneca Plc is spending big to develop cancer drugs that can sell for hundreds of thousands of dollars per patient annually. But in China, the British pharmaceutical giant is betting on a traditional heart remedy that can be bought for about \$2.50 a pack. The product, an extract of a dietary supplement often used to lower cholesterol called red yeast rice, is arguably more herbal treatment than innovative medicine. Luye Pharma Group Ltd., the Shandong-based company that makes the remedy, says its partnership with Astra makes the U.K. company the first multinational with exclusive promotion rights for a Chinese drug.

Astra's willingness to straddle the murky line between drugs and less-regulated supplements illustrates how determined the U.K. company is to push into the world's second-biggest pharmaceuticals market. Chief Executive Officer Pascal Soriot began pointing to China as a crucial growth market soon after taking the reins in 2012. The focus has paid off: Sales there last quarter surged 21%, outpacing those in all other regions, led by such innovations as the cancer medicine Tagrisso. Now, with the herbal extract called Xuezhikang, Soriot is looking at China as a source of new treatments, not just as a burgeoning market. Astra says it will consider getting the remedy licensed and sold elsewhere, including the U.S. and Europe.

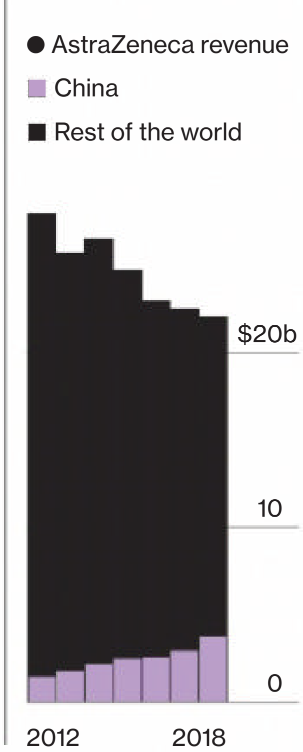
Under Soriot, the company has jettisoned rights to older, off-patent drugs to focus on expensive—and profitable—new medicines for cancer. Yet Ruud Dobber, head of the U.K. drugmaker's biopharmaceutical unit, says the Luye partnership makes sense because it can help Astra maintain its strength in the market for heart drugs in China, where it also sells the blood thinner Brilinta.

Astra is pushing at least one other relatively cheap, older drug in China. It won a contract to sell its cancer treatment Iressa in bulk to a centralized medicine program for 11 major cities there. The arrangement "creates headwinds for older products," Soriot said in May. But "the good news for us is that we have critical mass in China."

Xuezhikang is also approved in Taiwan, Singapore, and Malaysia, according to Luye. But red yeast rice compounds have provoked warnings by some health researchers in Europe because of potential side effects patients may not anticipate.

With the Luye agreement, Soriot is linking Astra to an industry favored by Chinese President Xi Jinping, who's called for promotion of traditional therapies alongside western medicine. Soriot has professed admiration for Xi. "A group of people, whether it's a company or a country, has to have that shepherd person," he says. "He has a vision for China; he has a vision for the world."

Some traditional Chinese remedies have turned into valuable medical tools, such as artemisinin, a malaria treatment derived from the sweet wormwood plant. Yet such examples are rare, and most big drugmakers have shied away from trying to turn such medicines into profitable products,



HENDRA SU/ALAMY. DATA: COMPANY REPORTS

says Craig Hopp, deputy director of extramural research at the division of the U.S. National Institutes of Health that studies alternative treatments.

A supply of 12 capsules of Xuezhikang costs 17 yuan ($2.50) on the website of Chinese online retailer JD.com. Sales were about $26 million in 2018, according to health-care data from IQVIA Holdings Inc., a fraction of the $2.4 billion revenue in China for cholesterol drugs.

Xuezhikang's packaging materials say it treats hyperlipidemia, a condition where the blood contains high levels of fat particles such as cholesterol, as well as a host of symptoms ranging from dizziness to anorexia. The drug's effectiveness comes from monacolins, chemicals in red yeast rice that resemble statins–a class of cholesterol-lowering drugs that have ranked among the pharma industry's most profitable. (Astra makes the statin Crestor.)

European drug officials haven't cleared red yeast rice or the extract, and a body that regulates supplements there warns against their use, particularly without consulting a physician. The U.S. Food and Drug Administration says red yeast rice shouldn't be used as a substitute for standard heart treatments.

Other than the purchase six years ago of a drug based on chemicals in fish oils that hasn't recorded sales so far, Astra's focus has been firmly on innovating medicines in the lab. Even Luye, founded in 1994 by Chinese billionaire Liu Dian Bo, is moving toward devising new treatments. Just last month it sought permission from the FDA to sell a drug for schizophrenia and bipolar disorder. Among its more advanced experimental projects is a collaboration with a U.S. biotech on a therapy for programming immune cells to attack cancers.

On its website, Luye calls Xuezhikang "the first evidence-based and internationally recognized Chinese lipid-adjusting drug which has completed phase II clinical trials required by FDA." The company points to studies indicating that it reduces cholesterol with greater safety than statins. But the approach isn't without risk: Monacolins are linked to the same side effects as those widely used medicines, which can include liver damage and rare cases of muscle tissue breakdown.

While China has revamped regulation of conventional medicines, its National Medical Products Administration doesn't require many traditional therapies to undergo randomized clinical trials for approval. These studies are the standard in the U.S. and Europe for ensuring safety and effectiveness.

Red yeast rice is unusual among supplements

◀ Red yeast rice

in that it contains a documented active substance. "We're pretty sure we know what's in it and how it works, which is rare for a botanical dietary supplement," says Hopp, the NIH scientist.

Still, some scientists have said there's a lack of reliable research into Xuezhikang. Studies of traditional Chinese treatments are often of poor quality, according to NIH's National Center for Complementary and Integrative Health. In a 2012 analysis of 22 studies of Xuezhikang for high cholesterol, most failed to show they'd assigned patients randomly to a treatment group, a key step in removing bias. One of the tests was the China Coronary Secondary Prevention Study, which reported positive results. "More rigorous trials with high quality are needed," the authors concluded, "especially for comparing the effectiveness and safety between Xuezhikang and statins."

Kirstin Weider was a resident physician at an internal medicine program in the U.S. last year when a 64-year-old woman came to the hospital saying she'd been tired and had lost her appetite. The woman had recently been diagnosed with high cholesterol and, wary of taking a prescription drug, decided to take a supplement: red yeast rice.

Tests showed the woman was suffering severe liver damage. Doctors stopped her from taking the supplement and gave her anti-inflammatory treatment, and she recovered. "We were lucky that we caught it at a good time," says Weider, who co-wrote a recent article on the episode in *BMJ Case Reports*. "It could have potentially had a worse outcome."

Dobber, Astra's biopharmaceutical unit chief, says the company is following standard safety protocols as it develops Xuezhikang. "All this will be done with the standards of AstraZeneca," he says. "We'll never compromise with the safety aspects."
—John Lauerman, with Dong Lyu and Tom Metcalf

THE BOTTOM LINE AstraZeneca, which typically develops high-priced medicines, has partnered with a Chinese company to market one based on red yeast rice.

● 2018 China sales of Xuezhikang, an extract of red yeast rice

$26m

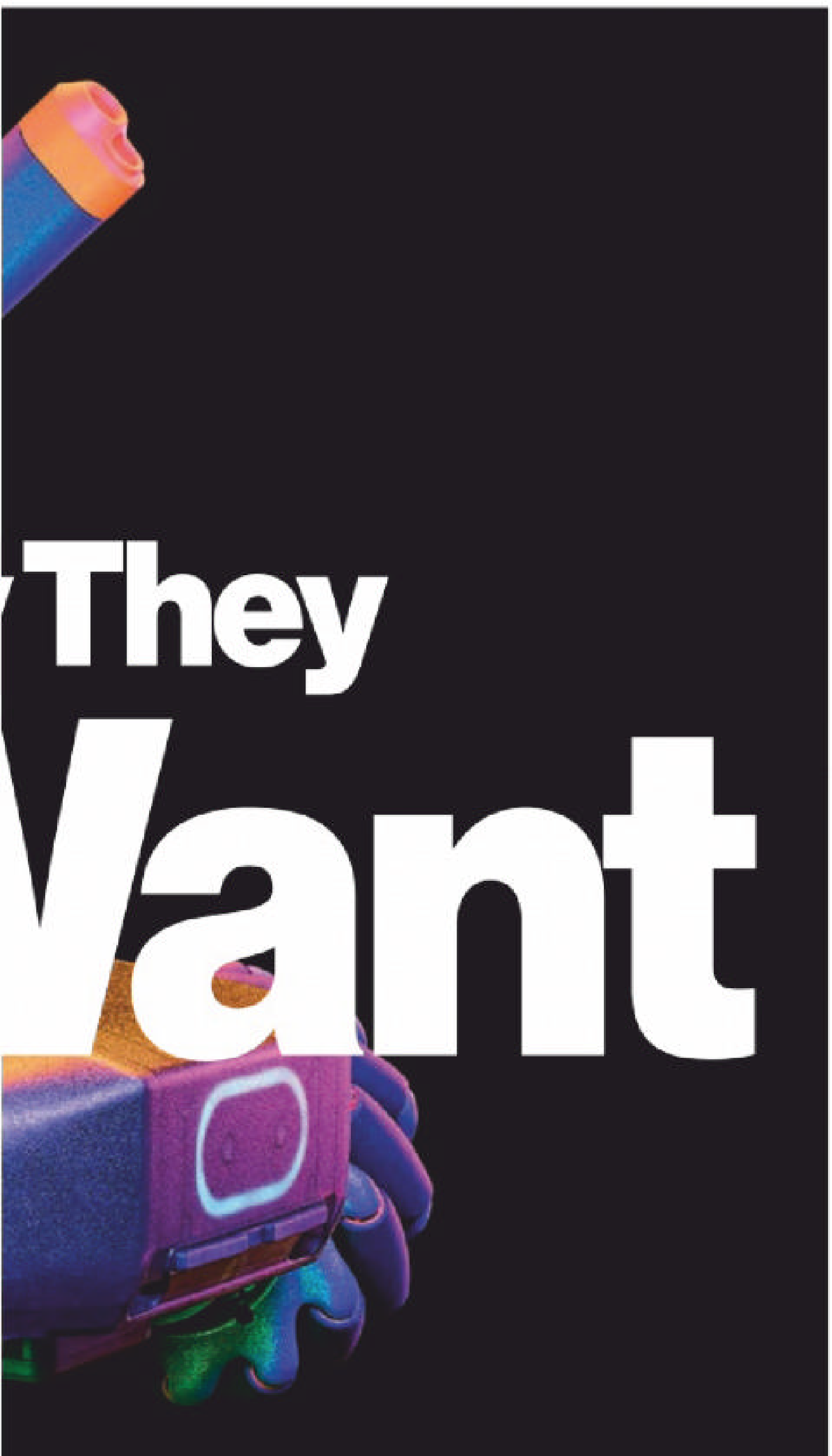
DJI, the world's largest drone maker, has come down to Earth.

On June 11, the company most closely associated with quadcopters unveiled a toaster-size robotic tank called the RoboMaster S1. Made of plastic and metal, it has four wheels, a rectangular base, and a gun turret that can swivel and fire lasers or tiny plastic pellets. Unlike DJI's flying drones, which do everything from taking pretty pictures to fertilizing fields, the RoboMaster is part teaching tool and part battle bot. The odd contraption ships as a kit that people must assemble, learning about robotics and software along the way.

"By doing the assembly process, you get to understand what each part is used for and what the principles are behind it," says Shuo Yang, one of the lead engineers. "We want it to look like an interesting toy that then teaches basic programming and mechanical knowledge." Once built, the RoboMaster S1 can be used to blast away at other S1s during some good, old-fashioned at-home family combat.

The tank can trace its origins to DJI's annual RoboMasters competition, held at a sports stadium in Shenzhen. For about three weeks each year, college-age students from China, Japan, the U.S., and elsewhere gather by the hundreds to engage in an all-out robot war. Competitors must build lawnmower-size robots from scratch and then face off on an obstacle-packed course at the center of the arena. Some of the robots fire large plastic bullets at one another and try to invade a rival team's base. Others work as supply mules gathering up

Edited by
Jeff Muskus



The latest creation from drone king DJI is a bit more DIY

bullets or as medics that repair wounded comrades.

During the contest, students operate their robots from remote consoles under the barked orders of a commander. Afterward, they retire to a chaotic workspace for robot repairs and upgrades in the belly of the sports arena, where soldering irons, wrenches, and other tools are on hand. Some competitors go all day without eating. It's all robots, all the time, until eventually a winner is crowned in a final match attended by thousands of screaming spectators. And yes, DJI films the whole thing to turn it into a reality show, eventually offering jobs to some of the contestants.

Frank Wang, DJI's reclusive engineer founder and chief executive officer, started the company out of his dorm room at the Hong Kong University of Science and Technology and turned it into an empire that accounts for more than 70% of the roughly $4.5 billion civilian drone market, according to analysts and drone registrations. Despite such success, DJI faces challenges from shrinking profits in the drone business and U.S. national security concerns around using products made in China. The RoboMaster S1, like the RoboMasters competition, is meant to foster enthusiasm for the field, particularly in Wang's home country.

DJI is charging $500 for the S1 take-home kit, which includes numerous parts for the robot's frame as well as a series of sensors and many, many screws. A hands-on experience with the product confirms that it takes a dad and his 10-year-old and 7-year-old sons about three hours and six cookies total to bring the RoboMaster S1 to life. But there's joy to be had at the end of the experience.

Users can link the RoboMaster S1 to their smartphones or tablets to see through the bot's main camera, steering by poking at the screen or simply tilting it in different directions, which the mobile device registers through its accelerometer and other sensors. If another S1 comes in sight, the system can lock onto it and hit targets on its body with either a laser or pearl-size plastic pellets that can be fired machine gun-style. The pellets are filled with water and dissolve into dust as the water evaporates—a problem solved relatively easily with a broom and some kids who weren't psyched to clean.

A player can race the tank around trying to spot targets placed in various locations inside the house before a competing bot does, with computer vision algorithms confirming the results. The contests proved far more interesting to the 10-year-old and 7-year-old than the building portion of the exercise, but results may vary based on the kid.

"We want it to look like an interesting toy that then teaches basic programming and mechanical knowledge"

Even though DJI is the only Chinese tech brand many Americans can recognize from store shelves, it's unclear whether consumers around the world will take to the assembly process or whether parents will really leap at a $500 opportunity to put tiny warring tanks in their homes. The company envisions the S1 as the first of many educational robots—and possibly a way to take its RoboMasters competition from niche reality TV to something more. "In the future, robotics will become another sport," says Yang, who's pursuing a Ph.D. in mechanical engineering at Carnegie Mellon University. "That's our vision." —*Ashlee Vance*

THE BOTTOM LINE Kids may not love the assembly or cleanup portions of the RoboMaster S1 experience, but it's tough to argue with the fun of a living room battle between minitanks.

PHOTOGRAPH BY VICTOR PRADO FOR BLOOMBERG BUSINESSWEEK

Our Next 'Cold War' Won't Look Much Like the Old One

● In an ever-more-interconnected world, traditional alliances are rarely absolute enough for a digital iron curtain

If the world is indeed headed for a Cold War 2.0 that splits the globe into U.S. and Chinese technological zones, the new "digital iron curtain" that separates them may well have to run through the heart of this bland industrial park in Oxfordshire, just off the M40 highway from London to Birmingham. On one side of the park looms a gleaming Amazon.com Inc. warehouse. Across the street is the Huawei Cyber Security Evaluation Centre, a modest brick building that's unremarkable but for the one-way glass that obscures its windows, the CCTV cameras that bristle from its walls, and the oversize air-conditioning units lined up outside to cool the servers within.

Partly on the strength of the work at the center, whose 38 security inspectors are paid by Huawei Technologies Co. but subjected to the same vetting required for U.K. intelligence officers, the government has made a preliminary decision to let the Chinese tech giant build noncore elements of Britain's sensitive 5G infrastructure, soon expected to connect everything from driverless cars to refrigerators. That would defy intense U.S. pressure to exclude Huawei from allied 5G networks. The decision isn't final, but when a U.S. ally as close as Britain is this reluctant to take sides in a dispute between the world's two economic and technological superpowers, it suggests that any cold war to come is likely to bear little resemblance to the last.

For one thing, Winston Churchill's Iron Curtain metaphor may be ill-suited to a digital version that's forced to follow a spaghettilike path through countries that, like the U.K., are either unwilling or unable to choose. The contest would also play out between two deeply intertwined capitalist economies, often joined by common global technological standards, rather than between the opposed and mutually excluding economic systems of the Soviet era. A Chinese government white paper released on June 2 described the two economies as a single industrial chain "bound in a union that is mutually beneficial." Such language would have been unimaginable coming from Moscow in the 1970s.

"It will be totally different, because the Soviet Union was completely shut down, and China cannot be," says Fan Gang, director of China's National Economic Research Institute. Think China's estimated $1 trillion "Belt and Road" initiative, stretching from Jakarta to Nairobi and Rotterdam. "The real question is, who will set the standards? Who will have the advantage?"

Of course, security-driven politics have a way of overriding economic interests. There's no denying the ferocity of the emerging rivalry between the U.S. and China on 5G, artificial intelligence, robotics, gene editing, and the data flows that fuel them all. If the divided future comes to pass, the swath of the globe aligned with China might buy driverless cars from the likes of Baidu and scroll WeChat and Alibaba on Huawei's 5G networks, under the watchful eyes of censors who can control the data through servers on their shores, while a more laissez-faire model persists in the other part of the world, ruled by Google, Amazon, Facebook, Cisco, and the odd European company, such as Ericsson.

In May, shortly after U.S. Secretary of State Mike Pompeo warned the U.K. against going "wobbly" on Huawei, Washington effectively banned the Chinese company from doing business on its shores. China responded with a plan to create its own "unreliable entities" list to punish companies that cut off Chinese ones for noncommercial reasons. According to China's state-affiliated media, Huawei's 33 American suppliers would be candidates, including Intel, Microsoft, Oracle, and Qualcomm. And while the White House has cut back on visas for Chinese students, 363,000 of whom were studying in the U.S. last year, Beijing issued a June 4 travel warning to citizens planning to tour the U.S., citing danger from shootings, robberies, and thefts. Last year, Chinese visitors spent $36.4 billion in the U.S. A disentanglement appears to be under way.

In a further potential escalation, Bloomberg News revealed last month that China is developing plans to weaponize its dominance of the supply of rare-earth metals used to make electric cars as

● The high end of an estimate of the share of the world's cobalt and lithium controlled by China

65%

well as the radar, guidance, and sonar systems in high-end military hardware. That's an area where China "won a war over the last 15 years before anybody else knew they were fighting," says Brian Menell, chief executive officer of TechMet Ltd., which mines niche metals in Burundi and processes them. China either produces or controls 95% of the world's rare-earth metals, Menell estimates, including the neodymium and praseodymium used to make critical magnets in electric vehicles. It also controls an estimated 60% to 65% of the cobalt and lithium needed for their batteries and 75% of all tungsten, a high-density metal used for penetrative missiles. TechMet recently hired Admiral Mike Mullen, former chairman of the U.S. Joint Chiefs of Staff, to chair its advisory board.

"You will not be the leading 5G or chip provider in both the U.S. and China, that much is becoming clear," says Andrew Gilholm, who directs analysis for greater China and North Asia at Control Risks, a consulting firm. Yet there are limits to how far this enforced separation can go. "How do you restrict exports of AI? These are intangible things that are not developed by one company or country but are developed globally on open platforms," he says.

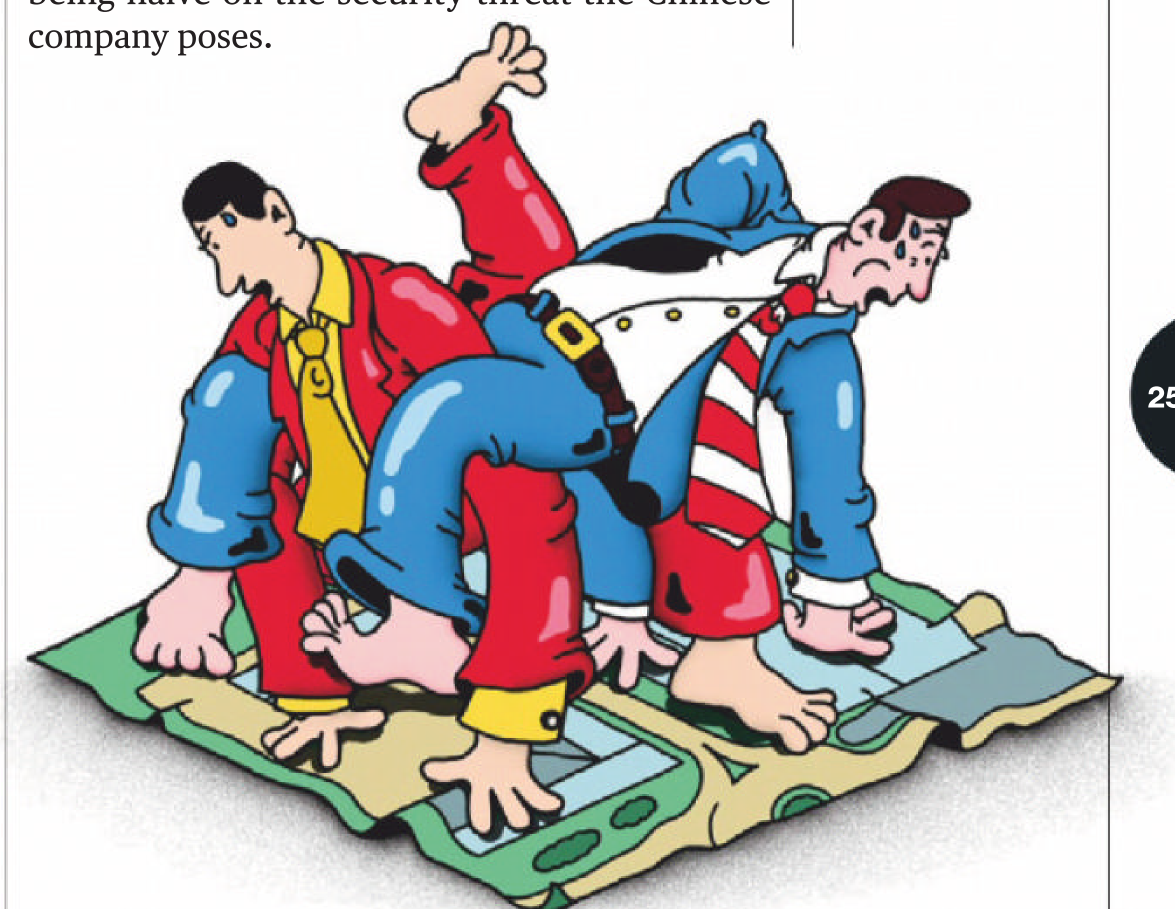
Similarly, when it comes to driverless cars, China is as unlikely to succeed without access to American technology as the U.S. is without rare-earth metals. China's autonomous-vehicle systems are still several years behind those in the U.S., according to Patrick Lozada, China director at Albright Stonebridge Group, a global advisory firm. Proposed U.S. Department of Commerce export controls on the transfer of "emerging" and "foundational" technologies, including geospatial positioning and computer chips, could crush China's program.

"Things were much clearer when trains ran on two different gauges of track," Lozada says, referring to the different rail widths that hindered trains from crossing between the Soviet Union and the West. "The world is so much more interconnected and complex than 50 years ago."

The case of Vietnam also suggests that concerns about the emergence of internet governance blocs may be oversimplified. This year, the authoritarian government in Hanoi became one of the latest to adopt tough cybersecurity laws modeled on China's, attracted by the promise of heightened domestic control. Yet Vietnam, which sees Beijing as its primary security threat, isn't joining any Chinese camp. When it announced the first steps in a 5G rollout last month, Vietnam's biggest mobile operator, Viettel Group, said it was building its own technology, not using Huawei's.

The U.S. isn't having an easy time getting allies to close ranks, either. It has so far persuaded only a handful of countries to ban Huawei, notably Australia and Japan. If Britain does decide to fall in line, it would be the first country in Europe to do so. Most countries will, like the U.K., try to straddle the two superpowers, says Samm Sacks, cybersecurity policy and China digital economy fellow at New America, a Washington think tank.

Britain's final decision on Huawei is still to be made, and Prime Minister Theresa May, who stepped down as leader of the Conservative Party on June 7 to clear the way for a race to succeed her, probably won't be making it. Some of her potential replacements have warned against being naive on the security threat the Chinese company poses.



Back in Oxfordshire, a slightly alarmed employee recently denied a reporter access to the Huawei cybersecurity center. It's overseen by a board chaired by an official from GCHQ, the U.K. equivalent of the U.S. National Security Agency. The board's latest annual report on the center's work acknowledges that Huawei products expose U.K. mobile networks to security risks but says that's a result of sloppy coding practices, not state sabotage. As long as those failures persist, the report says in language that's both diplomatically vague and loaded, "it will be difficult to appropriately risk-manage future products." *—Marc Champion*

THE BOTTOM LINE The U.S.-China race for tech dominance may look like a new cold war, but almost no countries have been persuaded to cut off one side or the other.

ILLUSTRATION BY HUNTER FRENCH

How Dangerous Is All This Debt?

● Loans to financially weak companies are booming, and regulators may be in the dark

There's been a steady drumbeat of warnings about a surge in risky corporate borrowing—but not much clarity about how serious the threat is. At issue is the more than $1 trillion market in leveraged loans. That's Wall Street jargon for high-interest loans to business with less than rock-solid finances. Federal Reserve and European Central Bank officials have drawn attention to the rise in corporate debt and the deterioration of lending standards. The loans are often bundled into securities known as collateralized loan obligations (CLOs).

Most of the watchdogs are careful to say a repeat of the 2007-2008 crisis is unlikely because most of the debt isn't held by banks. But that creates another problem: Regulators focused on banks are largely in the dark when it comes to pinpointing where the risks lie and how they might ripple through the financial system when the economy turns down. A big worry is that over-indebted businesses could face severe stress and, in some cases, insolvency, threatening jobs and deepening the next downturn. "I always remind myself that even the smartest policymaker with the most far-reaching perspective, data, and tools was basically blindsided by the breadth and depth of the housing crisis," says Mark Spindel, chief investment

Edited by
Pat Regnier
and David Rocks

officer at Potomac River Capital. “Leveraged loans and corporate debt are not housing, but maybe it’s more pervasive than we think.”

The mechanics of the leveraged loan market will be familiar to students of the housing crisis. With interest rates low, investors are willing to take greater risks to get higher yields. That makes lots of money available for lending, which in turn makes it easier for less creditworthy companies to borrow. Rather than keep the risky loans on their books, lenders often sell them to asset managers that package them into securities—CLOs—that are sold to investors such as insurers and hedge funds.

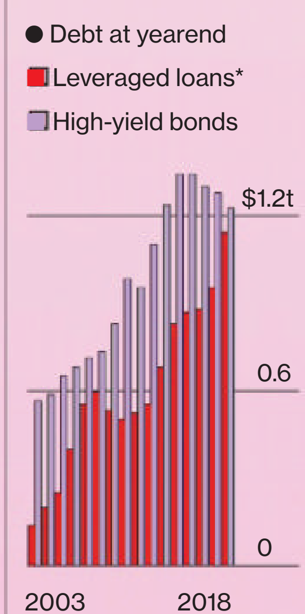
Yields on the riskiest portions of CLOs can approach 9% a year. And the growth of leveraged lending has been boosted by postcrisis bank regulations that helped the rise of shadow lenders—financial companies that aren’t regulated like banks. The market for leveraged loans has more than doubled since 2012.

The risk-taking could get worse: With demand by borrowers for leveraged loans declining this year, those still looking for financing have been able to extract looser terms. Protections in loan agreements that are meant to shield creditors from defaults are some of the weakest ever, according to Moody’s Investors Service. And lenders have begun to accept more aggressive projections of future cost savings and profits from companies seeking loans. Remember no-income-verification mortgages?

In recent months, both Fed Chairman Jerome Powell and Bank of England Governor Mark Carney have compared some aspects of the growth in leveraged lending to mortgages in the runup to the crisis. And while neither said there’s a risk large enough to topple the financial system, both concede there’s a lot regulators don’t know, such as who the buyers are and how well they can absorb losses. “I am not confident that regulators have or share among themselves the high-quality information that they need,” Erik Gerding, who specializes in financial regulation at the University of Colorado Law School, said at a congressional hearing on leveraged loans on June 4. “We cannot wait until it is time to man the lifeboats to fully fund the iceberg patrol.”

About 85% of leveraged loans are held by nonbanks, according to Wells Fargo research. But banks may play a larger role than many assume, according to Gaurav Vasisht, director for financial regulation at the Volcker Alliance, a good-governance group. Banks are involved in all stages of the process: They underwrite loans, sell them to the CLOs, invest in those securities, and then hedge those risks in the market. “One common narrative is that banks don’t have much risk or aren’t exposed to it,” Vasisht said at the hearing. “Banks are exposed to it.”

The financial industry is eager not to sound complacent. Brian Moynihan, chief executive officer ▶



PHOTOGRAPH BY JANELLE JONES FOR BLOOMBERG BUSINESSWEEK. *AS MEASURED BY THE S&P/LSTA LEVERAGED LOAN INDEX; DATA: S&P/LOAN SYNDICATIONS & TRADING ASSOCIATION, BANK OF AMERICA MERRILL LYNCH

◀ of Bank of America Corp., the leading arranger of high-risk corporate loans, has predicted that some highly leveraged companies could face “carnage” if the economy slows and they can’t keep up on their debt payments. Pacific Investment Management Co., the world’s largest bond investor, said in May the credit market is “probably the riskiest ever.” When the credit cycle finally does turn, UBS Group AG analysts estimate investors in junk bonds and leveraged loans could lose almost a half-trillion dollars.

Nevertheless, many investors and dealmakers see opportunity. Marc Lasry, founder of Avenue Capital Group, said in March that a “slowdown is great,” because it will lead to bargains. For BlueBay Asset Management, current economic conditions amount to a “Goldilocks” moment. Elliot Ganz, general counsel to loan industry group Loan Syndications & Trading Association, says there’s little reason to think any downturn would be a systemic risk. “Will investors take losses? Absolutely—but that’s what they get paid for,” he says. However, “banks are not going to be as exposed as they were in 2007.”

Just because banks are safer doesn’t necessarily mean the financial system is, says Karen Petrou, managing partner at Federal Financial Analytics, a regulatory-analysis firm. Debt investors might not be as resilient in a crisis, and their problems could create shock waves. “Banking regulators are being a little myopic when they’re looking only at the banking system for systemic risk,” she says. *—Sally Bakewell and Thomas Beardsworth*

THE BOTTOM LINE Most leveraged loans aren’t held by banks, which regulators find reassuring. But in an economic downturn, some investors could be in for steep losses.

Eight-Figure IPO. Zero-Digit Tax Bill

● Silicon Valley wins big with a tax break aimed at small businesses

Early investors and employees at Uber Technologies Inc., Lyft Inc., and other tech companies are getting a double reward this year: a wave of initial public offerings that puts billions of dollars in their pockets and a quirk in the law that means some of that money will be tax-free.

Entrepreneurs, venture capital firms, and early startup employees are using the Qualified Small Business Stock, or QSBS, provision to partially or totally wipe out their tax bills. “It’s an awesome way to mitigate tax,” says Richard Scarpelli, head of financial planning at First Republic Private Wealth Management. Of all the strategies that investors and business owners use to lower capital-gains taxes, he says, “this is by far the best.”

Shares are eligible for QSBS if they’re issued when a company has gross assets of $50 million or less. If you hold on to the stock for at least five years, you can avoid taxes on $10 million of any gains when you sell. But that $10 million is only a minimum—the law says you can instead shield as much as 10 times your initial investment, or basis, in the corporation. So a venture firm that put $10 million in an early startup could reap $100 million in tax-free gains. And QSBS’s benefit can be multiplied several-fold with clever planning.

The incentive was created after the recession of the early 1990s and expanded during the financial crisis that began in 2008. It’s supposed to help young companies attract capital. The congressional Joint Committee on Taxation says the provision costs the U.S. Treasury $1.3 billion a year. “There is no evidence that these sorts of breaks do anything to help the economy in the long run,” says Steve Wamhoff, director of federal tax policy at the left-leaning Institute on Taxation and Economic Policy. “Even in the short run, they are likely to reward investments that would have happened anyway.”

The vast majority of small businesses aren’t eligible for the break because they’re organized as pass-throughs, which have their income reported on owners’ individual tax returns. Only C-corporations, which file their own corporate returns, qualify for QSBS. The tech industry is

ILLUSTRATION BY JOSH FREYDKIS. DATA: JOINT COMMITTEE ON TAXATION the prime beneficiary. Venture-backed companies tend to be C-corporations, and in the past decade hundreds of tech startups have seen the sort of rapid growth that makes QSBS so lucrative.

Lobbyists for the industry defend the provision. "Folks are doing quite well at some of these IPOs, but they're creating real value in the economy," says Justin Field, senior vice president for government affairs at the National Venture Capital Association. QSBS helps bring funding to startups "at a much more vulnerable point in their cycle," he says. Getting early shares is the key, before a company hits $50 million in gross assets. That's not always an obvious moment, because as an accounting measure, gross assets are distinct from market valuation. Uber, founded in 2009 as UberCab, didn't hit that mark until the middle of 2013. By that point, IPO filings show, the company had issued more than 425 million shares, now valued at about $19 billion, which could be eligible for the QSBS benefit.

With the right moves, investors can supersize their benefit. One strategy is to carefully time stock sales over a couple of years. An investor can take advantage of both the $10 million and the 10-times-basis exclusions if they're claimed in separate calendar years. That way, someone who invested $2 million in a startup, for example, could pay no taxes while selling $30 million of stock.

The bad news for many tech billionaires is they may still owe California taxes. The home of Silicon Valley, which taxes its richest residents at rates as high as 13.3%, is one of just a few states that doesn't recognize QSBS. In most of the country, QSBS will exclude both federal and state taxes.

QSBS has been on the books since 1993. Initially, only half of a QSBS gain was protected from tax. Barack Obama floated the idea of expanding QSBS while still a presidential candidate as the financial crisis deepened in October 2008. The Democratic majority in Congress elected along with Obama agreed. By 2010, a temporary provision made 100% of the gains tax-free. "All of a sudden, it got more interesting," says Megan Lisa Jones, a tax attorney at Withersworldwide.

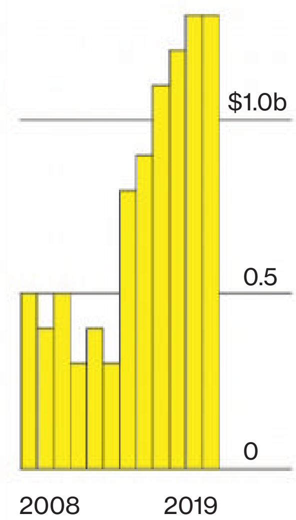
A Republican-led Congress made the benefit permanent in 2015. It took a while for even many accountants to realize what QSBS could do. "It wasn't until 2015 that people started to care about it," says Christopher Karachale, a partner at law firm Hanson Bridgett in San Francisco. "I've looked at 2016 tax returns where the accountant blew it."

But accountants and tax advisers quickly caught on. Startups began writing QSBS provisions into their investor agreements, promising to provide proof that their shares were issued before the $50 million threshold. Lyft's investor agreement, disclosed in its IPO filings, makes this promise to holders of series A and B stock.

While venture investors and founders, who can afford top-notch tax advice, are using QSBS, tech workers might not be as lucky. The rules are complicated, and it can be easy to miss out. For example, early employees needed to have exercised options when their startup's assets were still under $50 million. "If you planned well, you ended up with a phenomenal result," says Mary Russell, an attorney at Stock Option Counsel in Palo Alto, Calif., who advises tech employees on their compensation. "If you didn't, you were in a really tight, messy spot." —*Ben Steverman*

THE BOTTOM LINE The QSBS tax break was a little-known part of the tax code, until it became clear that it could be used to avoid taxes on millions of dollars of investor gains on tech startups.

● Estimated tax revenue lost from the break for individuals claiming gains on small business stock

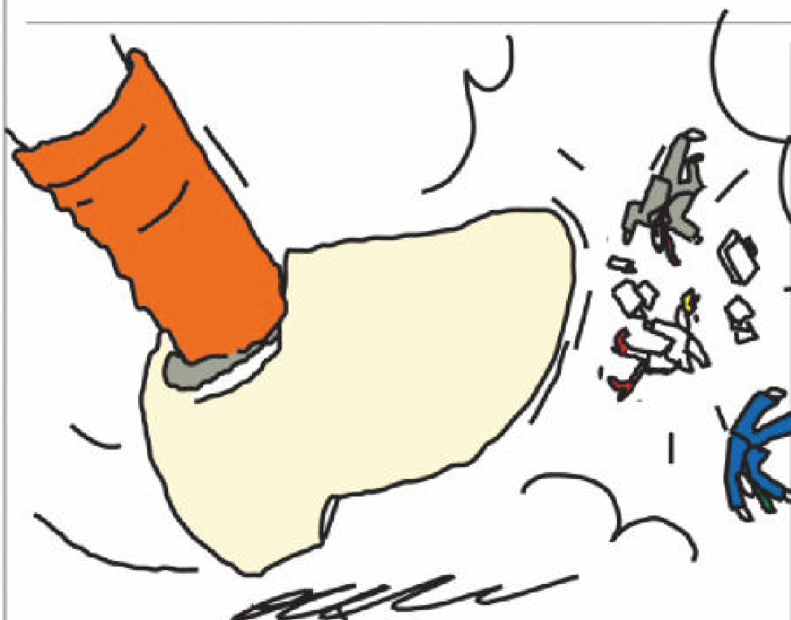


Why the Dutch Hate Bankers

● The image of the finance industry has plummeted since the crisis

The Netherlands is the cradle of capitalism—the home of the world's first stock market and the dominant global financial center in the 17th and 18th centuries. Its banking sector was the first to introduce innovations such as international trade finance and underwriting of bonds issued by foreign governments. And its banks today are among the European Union's safest, most profitable, and most digitally savvy. So why do the Dutch hate bankers so much?

A 2018 survey by researcher NIM found that Dutch people have Europe's highest level of trust in lawyers, doctors, and other professionals, but they're tied for second-lowest in their feelings toward bankers. The Netherlands is a hotbed of measured moderation—it lacks France's fierce unions, Britain's sensationalist tabloids, and Italy's string of failed governments—but Dutch bankers face Europe's toughest restrictions on pay, profits, and practices. When ING Groep NV, the country's largest lender, approached Germany's Commerzbank AG about a possible takeover this spring, it offered to move its headquarters to Frankfurt as part of the deal, according to local media reports. "The Netherlands is an ▶



◀ egalitarian country with relatively small income inequalities," says Jeroen Dijsselbloem, a former finance minister. "The culture in the financial sector, which overvalues its own achievements, doesn't really fit into that."

As global financial institutions plot their escape from post-Brexit London, few are shifting significant operations to the Netherlands. Japanese bank Norinchukin will place its European office in Amsterdam, and speed trader Jane Street Group LLC will serve its EU clients from there, but most top jobs that have moved have ended up in Dublin or Frankfurt. The country could have been an attractive destination for banks leaving London if not for its tough rules on pay in the financial sector, says Hans de Boer, chairman of the Dutch employers' federation VNO-NCW. "Brexit offered an immense opportunity that the Netherlands hasn't seized," De Boer says.

The animus is relatively recent, and with its historical role in finance, the Netherlands was long a comfortable place for bankers. In 2007, after aggressive lending at home and abroad, banks' assets represented more than five times gross domestic product, one of the highest ratios in Europe. But the expansion backfired, and during the financial crisis, three of the four biggest lenders, weighed down by plump real estate portfolios and risky foreign adventures, had to be rescued by the state. "Bankers' prestige was higher in the Netherlands before the crisis, but the fall was farther than anywhere else, too," says Arnoud Boot, finance professor at the University of Amsterdam and chairman of an advisory committee at the Dutch central bank.

Public rage boiled over as Dutch purchasing power plummeted. From 2014 to 2018, a theater group called The Seducers sold out venues with a play drawn from "true stories of the banking sector" featuring megalomaniacal executives chortling as they plot ways to pump up their loan books. ING Chief Executive Officer Ralph Hamers is a frequent target of politicians, newspaper columnists, and financial activists (one of whom is seeking to have Hamers jailed for his alleged role in the bank's money laundering issues, an accusation ING roundly rejects). Sjoerd van Keulen, once the country's "CEO of the Year" as boss of SNS Reaal—a bank that was bailed out—saw his contact details published online in 2013. A talk show host urged people to call or write demanding that Van Keulen give back a €1 million ($1.1 million) bonus granted before the crisis. No "scary threats," the host added, but to little avail. Van Keulen fled the country after the *Telegraaf* newspaper published an aerial photo of his sprawling mansion on its front page.

The crisis sparked a host of regulations such as capital requirements 25% higher than the European average. Dutch banks face a special tax to cover the costs of their bailouts, whereas France and Germany scrapped similar levies after Brussels set up an EU-wide fund for the same purpose. They can't deduct the full amount of interest costs from taxes, as banks in most other countries can. New rules allow companies to claw back bonuses if performance suffers. And bankers must sign an oath that they'll always put customers' interests first, won't abuse confidential information, and will acknowledge their "responsibility to society."

The biggest battleground is pay. Bonuses in the Netherlands can't exceed 20% of fixed compensation, whereas elsewhere in the EU they can equal a worker's base salary. In the face of public pressure, ING and ABN Amro Group NV have in recent years withdrawn proposed pay increases for their executives. After ING last year announced a pay rise, Prime Minister Mark Rutte criticized the move, calling banks "sort of semipublic institutions" that must show greater accountability than other companies. ING soon backed off the idea.

The banks have responded by dispatching top managers to schools to explain the importance of finance, and they've stopped hiring aggressive outsiders to collect on bad loans. They've scaled back investment banking units and limited their foreign expansion. And their international loan portfolios have tended to focus on less risky businesses such as cargo trade and agriculture, sectors they've historically specialized in. That's as it should be, says Joost Sneller, a member of parliament from D66, a social-liberal party in the governing coalition. For the Dutch, a good banker is "boring and decent," Sneller says, "not someone who's adventurous and pushing limits." —*Ruben Munsterman*

THE BOTTOM LINE After state bailouts for three of the four biggest Dutch lenders, the country's finance industry faces widespread mistrust and some of Europe's strictest regulations.

● Van Keulen

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● Investors ask if the boss of Mexico's most important company has his priorities right

"Will passenger Octavio Romero Oropeza please come to the ticket counter," blares a loudspeaker at Veracruz airport, briefly drowning out the clank of ancient air conditioners and the cacophony of passengers grousing about delayed departures.

The chief executive officer of Petróleos Mexicanos is running late—again. That's a feature, not a bug. One of Romero's predecessors, Emilio Lozoya, regularly commandeered a company helicopter to commute to work and to travel to nearby destinations, racking up a bill for 9.8 million pesos ($511,000), according to a federal audit.

Romero is on the front line of a campaign by his boss, President Andrés Manuel López Obrador, to rid the country of endemic corruption. The strategy involves leading by austere example, and that's what Romero is trying to do at Mexico's most important company. Taxes and fees paid by the state-owned Pemex contribute 20% of the government's budget, so its fortunes and those of the country are inextricably bound together. Nowadays, that codependency is more of a liability than a boon. On June 6, Fitch Ratings Inc. downgraded Pemex's bonds to junk status, citing the company's falling oil production and ballooning debt, and cut Mexico's sovereign debt rating as well. Moody's Investors Service Inc. delivered a similar one-two punch, shifting both Mexico's and Pemex's outlook to negative.

Over the course of a two-hour interview last month, Romero outlined his plans to shore up the tottering giant, which has an annual budget of $24 billion and employs about 128,000 people. Although he's been on the job for only a bit more than six months, Romero touted the success of some of his signature initiatives, including appointing honest party loyalists to senior management posts and clamping down on the multibillion-dollar trade in stolen fuel, which relies on collaborators inside the company.

A 60-year-old agronomist with no oil industry experience, Romero hasn't managed to convince investors that his "clean hands" campaign amounts to a viable business plan. Prioritizing the battle against corruption is "a mistake," says Luis Maizel, a senior managing director at LM Capital Group in San Diego, which holds Pemex bonds. Maizel argues that is a job not for the CEO but

Edited by Cristina Lindblad

PHOTO ILLUSTRATION BY 731; PHOTOS: BLOOMBERG; GETTY IMAGES. DATA: PEMEX; BLOOMBERG

for the compliance department. Romero should be spending more time figuring out how to halt a 14-year slide in crude output. “You have to solve everything at the same time,” says the money manager. “You cannot solve one thing at a time.”

Analysts want to see a more concrete plan for reviving production, especially after the new administration of López Obrador suspended auctions that would have allowed Pemex to share the financial burden of developing oil fields with private partners. Investors also want guarantees that the $8 billion refinery the president wants to build in his home state of Tabasco will not divert resources—or management attention—from that task.

Romero’s most important achievement has been a drastic reduction in gasoline theft, a long-standing problem that worsened in recent years as drug cartels infiltrated the illicit industry. Immediately upon taking office in December, AMLO, as López Obrador is widely known, deployed soldiers to stand guard over Pemex pipelines and launched an investigation into gas stations suspected of selling pilfered fuel. The crackdown coincided with a pipeline explosion in the state of Hidalgo in January that killed more than 100 people who’d gathered there to collect gasoline from an illegal tap.

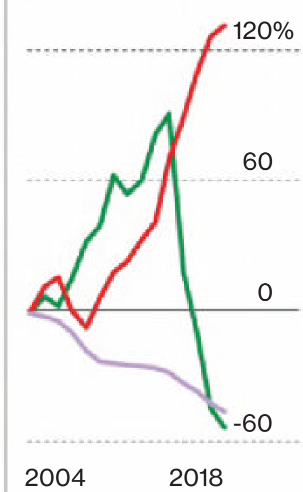
Romero said the tragedy only cemented his and the government’s resolve and credits the policies with reducing Pemex’s losses from theft by 95% since November, which will translate into $32.6 billion in additional revenue this year. Analysts question how Pemex arrived at those numbers: “Greater transparency in the calculation of this reduction would be useful,” says Ixchel Castro of energy consultant Wood Mackenzie.

Romero and AMLO met in the early 1990s in the oil-rich state of Tabasco, where both got swept up in a leftist movement that would go on to challenge the Institutional Revolutionary Party’s 71-year monopoly on power. When AMLO was elected mayor of Mexico City in 2000, he tapped Romero to head the administrative office. A five-year stint supervising the bureaucracy of the city was a dress rehearsal for his current role. “Pemex makes a lot more money than Mexico City, and where there’s more money, there’s more corruption,” Romero said.

His strategy for cleaning up the company involves “removing the head from the body.” Replacing the top brass with his own team hasn’t produced any discernible results on that front. In fact, one Pemex veteran elevated into a top job was forced to step down earlier this year amid reports that he’d diverted billions of pesos in public funds in his previous job at the company. ▶

● Change in Pemex oil production, debt, and capital expenditure since 2004

Production
Debt
Capex



◀ In the interview, Romero echoed AMLO's promise not to target suspected crooks from previous administrations—"we're not reviewing the pocketbooks of the ones before us"—but that stance may be changing. Late last month, the government issued a warrant for the arrest of Lozoya, the ex-Pemex chief, as part of an investigation into the purchase of a fertilizer plant. A court suspended the warrant, and Lozoya has denied all wrongdoing in a statement he posted on Twitter.

Adrián Lajous, who led Pemex from 1994 through 1999, doubts Romero's approach will make a dent in corruption. "The belief that it can be easily and promptly eliminated from the top down is a gross oversimplification," he said in an email. "Its eradication will require time, a detailed strategy, and a sustained managerial discipline."

Investors are less interested in seeing Romero root out bad apples at Pemex than they are in his containing the spreading rot on its balance sheet. At more than $100 billion, its debt is the biggest of any oil company. Romero admitted that Pemex's financial situation was worse than he'd anticipated: "One thing is what you have read, listened to," he said. "Another is when you arrive and are suddenly faced with the reality of the situation."

On his watch, the company has secured lines of credit from international banks, allowing it to renegotiate $8 billion worth of debt, and declared a two-year moratorium on new bond issuance. AMLO has injected fresh capital and taken steps to lighten the company's fiscal burden. His government is drafting legislation to revamp the oil royalty regime, which could yield a $7.2 billion reduction in Pemex's tax contributions by 2021.

Romero is also on a drive to cut costs, renegotiating drilling contracts to extract more favorable terms and eliminating hundreds of jobs. He's called a halt on deepwater exploration and production, saying onshore and shallow-water areas are less costly to develop. Investors question the logic of reducing spending in core drilling operations while lavishing funds on an expensive refinery. "All they're doing is diverting from one pocket to the other," says John Padilla, managing director of IPD Latin America, an energy consultant.

Padilla and other Pemex watchers will tell you that Job One for Romero should be replenishing Mexico's dwindling proved reserves of crude, which have fallen almost 77% in two decades, and boosting oil output. At 1.7 million barrels a day, production is now less than half of what it was at its peak in 2004. Romero pointed to a handful of recent onshore and shallow-water discoveries. Although he conceded they don't hold a candle to Cantarell—the giant deposit in the Bay of Campeche propelled Mexican production for decades but is now almost tapped out—he's not deterred. His eyes lit up as he sketched a map of exploration areas on a scrap of paper. "They're not necessarily extraordinary fields, but we've found some very important deposits," he said. —*Amy Stillman*

THE BOTTOM LINE Six months into his tenure, Pemex's CEO is struggling to shore up the company's finances, while his quest to stamp out corruption hasn't produced verifiable results.

The Long March To Openness

● China's once-cloistered central bank is becoming more communicative

It was the only lender in Mao Zedong's era, taking orders from the top to control the flow of money through the command economy. Now, even after decades of financial liberalization, the People's Bank of China has its hands on far more levers than other global central banks as it works to keep the nation's 40-year growth streak humming along.

From its imposing headquarters in Beijing's Xicheng District, the PBOC relies on a number of tools to direct the flow of liquidity in the $40 trillion-plus financial system. The seven-decade-old institution channels cash to development banks that finance the government's pet projects and leans on commercial banks when it needs to make it easier or harder for companies and people to borrow. The PBOC has also amassed one of the largest troves of reserves in the world, a $3 trillion horde that's chock-full of U.S. Treasuries.

Now, as China is poised to greatly expand foreign companies' access to its capital markets, the once-cloistered central bank is opening up, too. As part of the march toward greater transparency, PBOC Governor Yi Gang granted Bloomberg News a rare interview on June 7. The 61-year-old economist said one of his top goals "is to make my monetary policy more transparent, so that the whole society and the world can have the right expectations."

A good portion of the 35-minute discussion touched on a topic that's also commanding the attention of Yi's peers at the Federal Reserve and the European Central Bank: the role of central

● Offshore yuan exchange rate, yuan per dollar

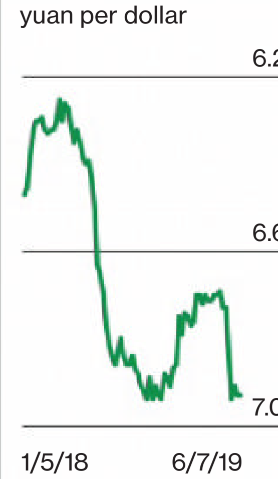


ILLUSTRATION BY PETE GAMLEN FOR BLOOMBERG BUSINESSWEEK. DATA: COMPILED BY BLOOMBERG banks in supporting growth amid an escalating confrontation between Washington and Beijing.

There's "tremendous" room to adjust policy, Yi said, conceding that tariffs have been a drag on exports and the economy. If President Trump makes good on his threat to slap duties on all U.S. imports from China, "that would be a disaster for the global economy," Yi said. As for the yuan, which has been close to breaking through seven to the dollar as economists pare back their Chinese growth forecasts, he says that "a little bit of flexibility of renminbi is good for the Chinese economy and for the global economy, because it provides an automatic stabilizer."

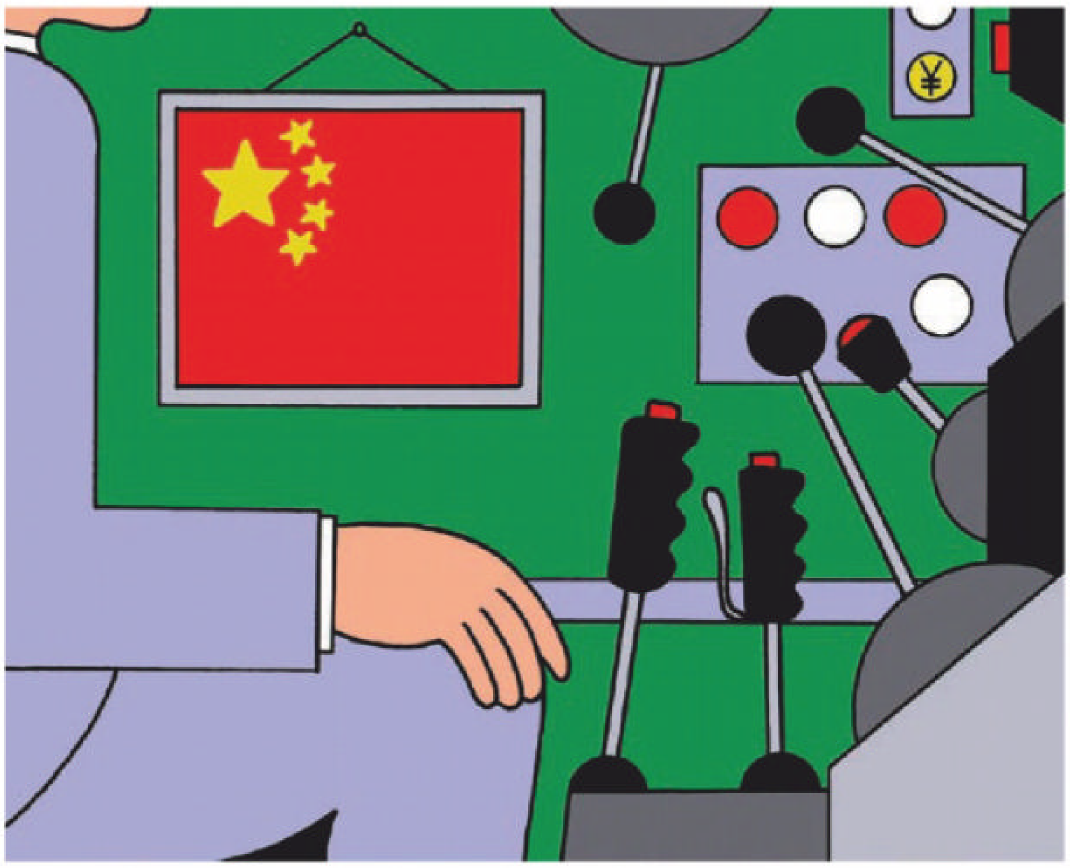
One of the ironies of Trump's frequent complaints that China manipulates its currency is that all recent signs are that, if anything, the PBOC has been acting to support, not weaken, the yuan, according to analysts. "The central bank of China is pretty much not intervening in the foreign exchange market for a long time, and I hope that this situation will continue," Yi said.

Like Zhou Xiaochuan, the long-serving PBOC governor he replaced in 2018, Yi is a reformer who's at ease on the global stage, thanks to his fluent English and stints studying and teaching abroad. Recently, his portfolio has expanded beyond monetary matters, as Vice Premier Liu He has drafted him onto the team negotiating with the Trump administration to roll back tariffs on Chinese goods.

Those talks broke down in May, leading both sides to ratchet up duties on each other's products and broaden the confrontation into new areas. The Trump administration has declared a ban on business with telecommunications giant Huawei Technologies Co., while China's Ministry of Commerce announced on May 31 that it's assembling a list of "unreliable entities" that will include foreign enterprises, organizations, and individuals that don't obey market rules, violate contracts, and damage the interests of Chinese companies. While the list hasn't been made public, Ford Motor Co.'s main joint venture in China was recently cited for antitrust violations, while FedEx Corp. is being investigated for "wrongful" deliveries.

Recent data suggest China's economy is decelerating again despite a fresh dose of stimulus. The challenge for the PBOC is how to support the near-term goal of shoring up growth without abandoning the longer-term objectives of reducing risk in the financial system and curbing the expansion of debt, which now approaches three times annual economic output.

Yi has already lowered the share of deposits



banks need to keep at the central bank—known as the required reserve ratio—and economists expect more reductions to free up funds for loans. He's also ensured money markets have ample liquidity, a crucial step in avoiding a credit crunch if a lender runs into trouble, as happened with Baoshang Bank, which was seized by regulators this month. At the same time, Yi hasn't moved benchmark interest rates, which haven't changed since late 2015. China's monetary policy has "to be in a sober mind position," he said. Fiscal support, in the form of tax cuts, is helping, too, meaning "the current package is able to cover the cases where the situation is getting a little bit worse," he explained.

Coordination of fiscal and monetary policies is harder to pull off in countries with independent central banks, but not in China, where the PBOC reports to the State Council (the equivalent of the cabinet). While that means policymaking is often dictated by political considerations, it can also help deliver a speedy response to cyclical swings in the economy. "The head of the Fed in China is President Xi," said Trump in a June 10 interview on CNBC, as he lamented his own lack of control over monetary policy.

Larry Hu, chief China economist at Macquarie Group, notes that Yi's willingness to meet with foreign reporters is encouraging. "Being able to communicate well with Western investors is a powerful weapon, not only for Jack Ma but also for Chinese central bankers," he says. —*Bloomberg News*

THE BOTTOM LINE People's Bank of China Governor Yi Gang is following in his predecessor's footsteps and allowing the public—and foreign investors—a clearer view into its inner workings.

The Trustbusters

● Delrahim and Simons use their antitrust experience to keep Big Tech in line

Their Yalta moment took place, appropriately enough, at an invitation-only meeting of the world's top antitrust enforcers in mid-May. As attendees at the conference in Cartagena, Colombia, debated competition policy in a digital economy, Makan Delrahim, chief of the U.S. Department of Justice's antitrust division, and Joe Simons, chairman of the Federal Trade Commission, divided the four largest U.S. tech companies between them.

After eight months of emails and discussion and decades of laissez-faire policy, they were ready to put Amazon, Apple, Facebook, and Google under the microscope, according to a person familiar with the matter. That decision, echoing the way Allied leaders carved up postwar Eastern Europe, introduced what could be a new era of antitrust enforcement. Tech's Big Four may not be sovereign nations, but their almost $3 trillion in market value exceeds many countries' gross domestic product, and their power to determine what people read, watch, and buy is immense.

It's now up to Simons and Delrahim to figure out whether, and how, to bring the companies in line. Simons, a longtime FTC hand, kept responsibility for Facebook Inc., the subject of an ongoing consumer privacy probe at the FTC, and also took on Amazon.com Inc. He agreed to hand Delrahim oversight of Alphabet Inc.'s Google. The FTC had investigated Google but closed the case in 2013 without taking any action. Delrahim also took jurisdiction over Apple Inc. A spokeswoman for Simons declined to comment for this story. A DOJ spokesman says the two agencies "continue to discuss their respective jurisdictions, as they always do."

It's no accident that the two, who aren't close but occasionally meet for dinner, are the Trump administration's generals in the new antimonopoly push. They were both foot soldiers in the last epic U.S. antitrust battle, Justice's late-1990s case against Microsoft Corp., then the dominant company in the tech industry. Simons may even owe his job as FTC chairman to his behind-the-scenes Microsoft role.

Edited by Caroline Alexander, Paula Dwyer, and Jillian Goodman

PHOTO ILLUSTRATION BY 731; PHOTOS: ALAMY (1); BLOOMBERG (2). DATA: FEDERAL TRADE COMMISSION

A prolific writer of treatises on antitrust arcana, Simons, 61, served two previous FTC stints, once in the late '80s under Reagan and again in the early years of the George W. Bush administration. "I feel as though I have been essentially training for this job since law school," he wrote before his 2018 confirmation hearing. The low-profile lawyer seeks bipartisan support for the agency's actions, which has often delayed matters at the commission, says a person familiar with the matter. He prefers not to bring cases that could be seen as politically driven and seems uncomfortable in the spotlight.

The 49-year-old Iranian-born Delrahim, by contrast, is politically ambitious and pleased that antitrust is front-page news, according to those who know him. As a former Capitol Hill staffer, lobbyist, and Justice official, his path to becoming a top antitrust enforcer has also been more circuitous. His background includes three years as chief counsel to the Senate Judiciary Committee in the early 2000s and a job as a patent lawyer. He even dabbled in movie production, taking classes at UCLA's film school and investing in a movie called *Trash Fire*.

At the beginning of the Trump administration, Delrahim worked for then-White House counsel Don McGahn and helped shepherd the Supreme Court nomination of Neil Gorsuch. For more than a decade before that, he'd been in private practice at Brownstein Hyatt Farber Schreck. There he dispensed advice on mergers and other antitrust issues to companies including Google, which hired him in 2007 to lobby for its acquisition of digital advertising company DoubleClick. He also advised Apple on patent reform legislation. Because of those roles, Senator Elizabeth Warren of Massachusetts, who's seeking the Democratic nomination for president, is calling on Delrahim to recuse himself from investigating either company. The Justice Department didn't respond to a request for comment.

Both joined the Trump administration as calls for tougher enforcement of tech platforms were beginning to crescendo on the Left and the Right. Trump has sometimes led the chorus in tweets and interviews: In a recent call-in to CNBC, he said "there is something going on in terms of monopoly" and the U.S. should copy the European Union in suing and fining tech companies for billions.

The administration sought out antitrust enforcers who would take a hard look at Google in particular. The acting chairman of the FTC in 2017, Republican Maureen Ohlhausen, campaigned to keep her job by promoting "regulatory humility," evidently anticipating that Trump would want a soft touch on mergers and business conduct. She also sought the support of McGahn and Ivanka Trump.

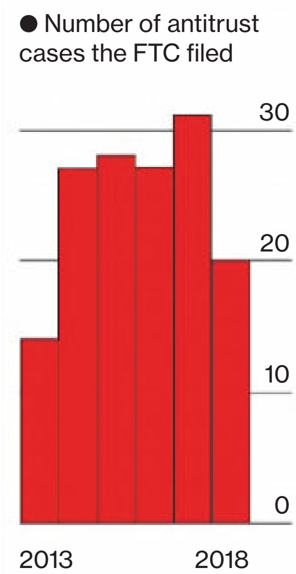
But Ohlhausen had voted with four other FTC commissioners to close the Google investigation without bringing charges. That was a black mark in the eyes of Google foes, including Oracle Corp., which jumped on the change in administration as an opportunity for the FTC to take another run at Google. The White House passed on Ohlhausen because she wasn't seen as someone who'd get tough on the world's biggest search engine, say three people familiar with the matter, and soon settled on Simons, then a partner at law firm Paul, Weiss, Rifkind, Wharton & Garrison in Washington. Trump told Simons in a meeting before his nomination not to be afraid to be a tough enforcer, says one of the people. "I'm proud of my time at the FTC," Ohlhausen says. Oracle declined to comment.

Working in Simons's favor, a person familiar with the matter says, was his record in the Microsoft case, which White House advisers had discussed. Among his clients in the early days of the web were airline reservation service Sabre, now Sabre Corp., and Sun Microsystems, now owned by Oracle, both of which raised concerns about how Microsoft tried to squelch competition from rival browser Netscape. Simons was among those who pushed the U.S. to bring an antitrust case, basing his argument on a 1951 Supreme Court decision that found an Ohio newspaper had violated antitrust laws when it denied advertising space to a company that also wanted to buy ads on local radio.

Delrahim had a cameo in the Microsoft case, too. The company's chief antagonist on Capitol Hill was then-Senator Orrin Hatch, the Utah Republican who chaired the Judiciary Committee. Delrahim joined the committee's staff just as the lawsuit got under way. Three and a half years later, when the case was settled, the committee held a hearing in which Hatch said he favored tough antitrust enforcement over heavy-handed regulation of the day-to-day market when the technology industry becomes overconcentrated. Delrahim, then 32, was sitting directly behind Hatch as he spoke.

Almost immediately after joining the antitrust division in September 2017, Delrahim sued to block AT&T Inc.'s takeover of Time Warner Inc., which was expected to win approval because AT&T and Time Warner didn't compete directly. The traditional fix for such mergers involved imposing conditions on how the companies could operate post-merger. Delrahim, echoing Hatch, rejected that approach as requiring too much oversight of the company.

As a candidate, Trump had vowed to block the merger, sparking speculation that Delrahim had ▶



The Trump administration sought out antitrust enforcers who would take a hard look at Google

◀ acted at the behest of the White House. Delrahim denies the administration had any involvement. Although he lost the fight, Delrahim's willingness to take the matter to court was groundbreaking in antitrust enforcement.

Simons, who often points to his record targeting anticompetitive conduct by companies when he ran the FTC's competition bureau from 2001 to 2003, told senators at a hearing last year that the place to look for antitrust violations is where there's likely to be potential market power. "That description would describe some of these big tech platforms that we're all talking about in the news regularly," he said. "So those are the places you would look. And without commenting on any specific company or any specific investigation, this is something that is a priority for us." *—David McLaughlin, Naomi Nix, and Daniel R. Stoller*

THE BOTTOM LINE The U.S.'s two top antitrust enforcers have the administration's backing in taking an aggressive approach to investigating big tech companies for violations.

Tyranny Writ Small

● Tiny Equatorial Guinea has oil but how much longer can that fuel the ruling family?

The six-lane highway stretching from Equatorial Guinea's airport to its multimillion-dollar seaside resort in Sipopo is lined with skyscrapers, a state-of-the-art Israeli-run hospital, and luxury homes surrounded by carefully tended gardens. The 16-mile drive suggests the country's oil reserves have enriched this tiny 11,000-square-mile West African nation, which has been ruled for almost 40 years by one man, President Teodoro Obiang Nguema Mbasogo. State media once compared him to God.

Veer off the route, and the picture that emerges is much less divine. In Fishtown, one of as many as eight shanty communities in the capital, Malabo, hundreds of people live in wooden shacks. Children romp near sewage that flows onto dirt roads strewn with trash. Street vendors sell tomatoes and beans under a mesh of electrical wires that often spark fires. To pass time, unemployed men play Akong, a local board game. Many were idled after Obiang's building spree ended two years ago. The country has some of the world's worst social indicators: Less than half of the population of about 1.3 million people has access to clean water, and 20% of children die before reaching the age of 5, United Nations data show. More than half of all children of primary age aren't in school.

Poverty is in the eyes of the beholder—at least according to Gabriel Mbaga Obiang Lima, one of the president's sons and the minister of mines and hydrocarbons. He acknowledges difficulties in tackling what he calls "pockets" of destitution, which he blames on the poor having too many children and not saving enough money. "When our peers from Nigeria and Sudan come to see our slums, they say: 'This is not poverty. Come to our country to see real poverty.'"

His father, the president, rules the country from Malabo, which is set on a volcanic island about 150 miles from the rest of the country on the mainland. Obiang's rise to power began in Spain—the former colonial ruler of Equatorial Guinea—where he received military training at an elite academy during the 36-year-long dictatorship of Francisco Franco. When the African country became independent in 1968, Francisco Macias Nguema was elected president—and Obiang, his nephew, rose to become head of the national guard. Macias hated intellectuals—he even banned the word "intellectual." A third of the population was killed by Macias's security forces or fled during his decade-long rule. Obiang overthrew his uncle in 1979. Macias was put on trial and executed by firing squad.

Until the 1990s, Equatorial Guinea's main source of revenue was cocoa and coffee. Then oil was discovered. (The country is the smallest member of OPEC.) Since then, Obiang has tightened his grip through a system of patronage that enriches his family and allies. Obiang's eldest son and vice president, Teodoro Nguema Obiang Mangue, flaunts his private jet trips and yacht parties on Instagram. "Teodorin" (or little Teodoro) was convicted in absentia by a French court in 2017 for embezzling more than $100 million of Equatoguinean public money to buy a fleet of supercars and a mansion near the Champs-Élysées. He spent more than $300 million from 2004 through 2011 on luxuries, including Michael Jackson memorabilia, U.S. Department of Justice lawyers said in a separate money laundering case settled in 2014. That sum amounted to slightly less than 10% of Equatorial Guinea's annual oil revenues at the time, and according to a paper published by the Center for Global

● President Obiang

FROM LEFT: XINHUA/ZUMA PRESS; DAVID DEGNER/GETTY IMAGES

Development, would have been more than enough to eradicate the country's poverty. Teodorin hasn't commented on either case, but his defense appealed the French court ruling, saying he amassed his fortune legally and has immunity as vice president.

Teodorin is in charge of national security. Under his watch, arbitrary detention, torture, and the killing of dissidents have earned the regime a human-rights record comparable to that of Syria and North Korea in the latest ranking by U.S.-based think tank Freedom House. Teodorin's half-brother Obiang Lima, the oil minister, dismisses accusations of rights violations and torture as "fake news" spread by international organizations.

Any local dissent, however, is muted. Only 10 public protests were recorded in Equatorial Guinea from 1997 through April of this year, according to Armed Conflict Location and Event Data Project, a U.S.-based nongovernmental organization that tracks political unrest. Part of the reason for dampened dissent is the conscious underfunding of education by the regime. Activists' ability to mobilize is limited by the cost of mobile internet access in the country, which is the highest in the world: 1GB of monthly broadband data costs $34.80, well above the $6.96 charged in neighboring Gabon and 73¢ in India, according to data compiled by the Alliance for Affordable Internet.

"Terror and fear has taught our people to swallow their rage," says Moises Enguru, a pastor and rights activist. "Our generation inherited a useless country. The regime has killed our working culture, education, and morals." A group of young writers and artists is struggling in secret to nurture a generation of activists who can more effectively challenge the regime. "We need to educate critical minds who can lead the movement," says one of the organizers who spoke on condition of anonymity for fear of reprisal. "Change is inevitable, but it may take a while."

One of the few people to openly criticize the regime is Mariano Ebana Edu, a rapper whose 2013 hit, *A Letter to the President,* called for equal rights and potable water. On a recent evening, with the music in his jeep blaring, Edu drives through the streets of a slum called Santa Maria. He passes women with buckets on their head lining up to get water from communal taps. Moments later, he's in the upscale Paraiso neighborhood, where high white walls topped by barbed wire ▶

● Equatorial Guinea

▼ A ferry leaving the capital of Malabo

◀ and spanning several blocks seal off Obiang's private compound. "This is our reality," says Edu, who goes by the name Negro Bey. "Our wealth is not shared fairly."

On the sidelines of an oil conference at the Sipopo conference center in April, Obiang Lima says foreign attempts to discredit his father have failed and that the government continues to use oil revenue to improve the lives of Equatoguineans. But poverty has risen since oil prices dropped in 2014, and the country's production was halved to 120,000 barrels per day from more than 300,000 during peak years, according to the latest World Bank Macro Poverty Outlook.

"Life is getting harder," says Marcial Abaga, a member of the opposition Convergence for Social Democracy Party, whose home in Fishtown, like many others, has no running water. "If you complain about living conditions, you're considered an enemy of the state, and you're ostracized. You become like me."

Meanwhile, at 77, Teodoro Obiang isn't loosening his grip on power, despite rumors of ill health and alleged coup attempts. When recent waves of unrest unseated autocrats from Sudan to Zimbabwe, Obiang was unshaken. He's now the world's longest-serving president. And he and his family are likely to extend their hold until their oil runs dry. *—Alonso Soto*

THE BOTTOM LINE The tiniest member of OPEC is a former Spanish colony dominated for almost a half-century by the family of President Teodoro Obiang.

Merkel and Macron Face Off Over the EU's Top Seats

● Who fills them will come down to much more than qualifications

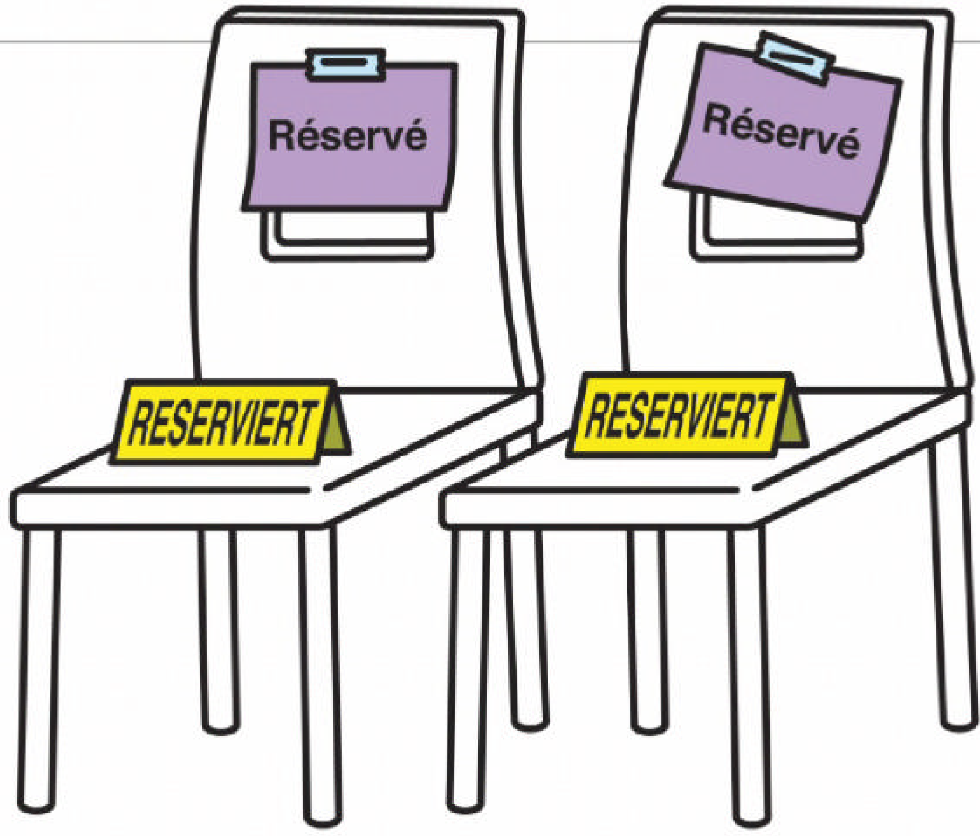
Ever since the European Central Bank was established in 1998, the appointment of its president has been dictated by politics. It's a fight that encompasses the historical rivalry between France and Germany, and it's as much a struggle for influence and power as it is about a vision for monetary policy.

The 2019 version of the race is proving to be no different. The new ECB chief won't take office until current President Mario Draghi steps down in October. But German Chancellor Angela Merkel, who's preparing to leave office and has an eye on her legacy after 14 years as the European Union's most powerful figure, is already squaring off against French President Emmanuel Macron, who wants to reform the continent in his own image. And it gets more complicated. For the first time, the ECB job is up for grabs at the same time as the other top EU positions: the president of the European Commission, the EU's executive arm, and the president of the European Council, who chairs summits of leaders. The selection of a candidate for any one of these jobs wouldn't necessarily affect decisions on the others, yet EU officials acknowledge that government chiefs—the ultimate arbiters of who gets what—are discussing them as a package.

By law, the EU must divide its top jobs along geographical lines. At the most basic level, this means giving as many jobs to the German-led group of (mainly) northern European countries that promote fiscal responsibility as to southern nations, arguably including France, who are more dovish. That means there's a lot of horse-trading going on. "The challenges that the euro zone is going to face over the next few years—the runup to the next recession, possibly a crisis in Italy—means that it really should be the best man or woman for the job," says Christian Odendahl, chief economist of the Centre for European Reform in Berlin. "But the job is more political than ever, so I'm not sure that person is in the running."

"The job is more political than ever"

The bundling up of EU jobs means, for instance, that Jens Weidmann, the hawkish Bundesbank president who many EU officials say is one of the front-runners to replace Draghi, is unlikely to get the job should Merkel push for a German—or even a non-German whom Berlin supports—to become head of the European Commission. Unluckily for Weidmann, Manfred Weber, a politician allied to Merkel's own Christian Democratic Union, is a favorite for the commission job. The focus for the ECB would then point toward François Villeroy de Galhau, Governor of the Banque de France, or French ECB Executive Board member Benoit Coeure.



But here things get even more tangled: Weber is seen as something of a lightweight, and it became clear at a summit of EU leaders in May that he doesn't have the overwhelming support of many of them, officials say. His downfall could lead to a Macron-backed figure getting the commission post instead—perhaps Michel Barnier, the EU's chief Brexit coordinator, who denies he wants it but is hawking his credentials around European capitals, or Denmark's Margrethe Vestager, the bloc's high-profile antitrust czar who belongs to Macron's centrist European alliance. Giving it to either of these contenders would shift attention for the ECB role back to Weidmann and create a whole new set of if-then conditions around the leadership of the European Council.

Draghi took over the ECB in November 2011 at the height of the euro area's debt crisis, when the very existence of the currency bloc was under threat. He would do "whatever it takes" to keep the euro intact, he said in 2012, following up with the creation of a radical tool now heralded as having prevented the euro from imploding, and then expansionary monetary policy to stave off deflation. Some of the candidates to replace him think those measures need to keep going for a bit longer, or even be stepped up, while others say it's time to start putting away the crisis tools. Despite its status as the euro area's largest economy, Germany has never had an ECB president. That counts in Weidmann's favor. "If the Germans really want it, and they want to go all out to get it, then they probably will," says Tim Jones, an analyst at policy consultants Medley Global Advisors in London. "But the question is, do the Germans really want it?"

EU officials with knowledge of the discussions over the appointment say they're not convinced. Although the German government makes the right noises in public, behind the scenes its diplomats are a lot less insistent. In private meetings they've talked up Coeure's chances, which is either a double bluff to confuse the French or a sign that Merkel has other priorities. Those same EU officials aren't convinced Macron wants the ECB job either, believing instead that securing the top spot on the commission will put him in a better position to start remaking EU policies, such as by persuading countries to pool resources and sovereignty more than they do now.

Germany has always preferred to lead from the shadows by placing its civil servants in influential positions rather than by having its people in the spotlight. That's why Weidmann wouldn't be too difficult for Merkel to sacrifice, officials say, particularly if the alternative is France driving a hard bargain in other areas of EU policy, such as the plan to give the euro area a centralized pot of money, which could be used to fight future financial crises, or rules limiting national debt and deficits. Germany may even propose an ECB candidate who isn't Weidmann. One name mentioned is Klaus Regling, head of the euro zone's bailout fund, who has European policy experience but lacks Weidmann's track record of opposing ECB stimulus.

Smaller EU governments (that is, not Germany or France) have begun to express frustration in Brussels at being kept out of the picture, officials say. The non-German, non-French candidates that Berlin and Paris might be able to agree on are mainly Finns—former Finnish central bank governor Erkki Liikanen and his successor, Olli Rehn, best known for being the EU's economy commissioner at the height of the euro area crisis. There's also one Dutchman in the mix: Klaas Knot, head of his country's central bank. For all Europe's pledges of a push for gender equality, none of the likely candidates is a woman.

Ultimately, the ECB decision will come down to which leader is prepared to sacrifice his or her candidate. A summit of leaders is scheduled for June 20 and 21, but EU officials warn that a solution may be some way off. There's one wild card: What will Merkel do after she steps down as chancellor? Despite her denials, she may make an 11th-hour bid to become European Council president. If she does, Germany probably won't have an ECB chief. But it might be quite content. —*Ian Wishart and Paul Gordon*

THE BOTTOM LINE The contest to become the next president of the European Central Bank is turning into a proxy battle between Germany and France over the power to shape EU policy.

ILLUSTRATION BY 731

SOLUTIONS

Stitch Fix: In Data We Trust

JAKE STANGEL

An online retailer and styling service uses algorithms to remove bias in its clothing selections

June 17, 2019

Edited by Madeleine Lim and David Rocks

It takes guts to tell a fortysomething woman she should wear a romper—the one-piece shorts-and-shirt combination traditionally worn by small children. Still, that's what Katrina Lake, 36, co-founder and chief executive officer of online retailer and styling service Stitch Fix Inc., did in early June when she pulled together an assortment of clothing for a customer. Besides the romper, Lake added a floral wrap blouse, a tank top, red shorts, and a skirt. "When our algorithm is recommending to me a romper or jumpsuit for a 40- or 50-year-old, I totally trust it," Lake says, talking about the statistics-driven program she consults before selecting pieces. Human bias, she says, would have counseled against the item.

Removing bias is a large part of the success of Stitch Fix. For a $20 fee, the service mails out clothing to clients based on what it's come to know about their tastes—not based on their age or ZIP code. Over the last year, Stitch Fix says, 3.1 million people, mostly in the U.S., have used its service. On June 5, amid a terrible earnings season for the apparel sector, the company reported $408.9 million in revenue for its third quarter, which ended in April, a 29% increase from the year-earlier period. It also posted $7 million in net income. Analysts had projected a $2.3 million loss. Stitch Fix expects revenue for the year to rise to $1.58 billion, up from $1.23 billion for 2018.

The recent results helped send shares up to around $30, but before that the company had been a tough sell among investors, who say they're skeptical it can continue to grow at a solid pace. Late last year, when Stitch Fix reported lower-than-expected revenue, its shares plunged to just under $17. It didn't help that retail giant Amazon.com Inc. had just invaded Stitch Fix's space: It brought out Prime Wardrobe, a service that lets Prime customers try clothing for free, and started testing Discover Your Style, a program that makes personalized shopping recommendations.

Lake says Stitch Fix's relatively unusual approach to selling apparel has made it hard to win the confidence of investors, a situation she finds frustrating. "We've done what we told the Street we would do," she says, adding that as investors see she can deliver, she should gain their trust. Stitch Fix opened for business in 2011 and listed on the Nasdaq almost two years ago, with shares priced at $15.

"Their biggest problem is customer retention," says Sucharita Kodali, a retail analyst at Forrester Research. Stitch Fix can encourage customers to increase the frequency of delivered boxes, increase the number of items in each box, or play with pricing. "They've probably tried all of that, and there's a natural limit."

Megan Long, 33, a music theorist at Oberlin College in Ohio, tried Stitch Fix about six years ago, when she needed professional clothing. Initially, she was thrilled. The items, including a houndstooth jacket she still wears frequently, fit well and matched the "gently preppy vibe" Long aspired to. In large part thanks to Stitch Fix, she says, she now has a better sense of her style and feels more confident shopping on her own. She stopped using the service about two years ago.

But for every Megan Long, cue a customer like Nancy West, who tried the "transformative" service a year ago and has since received about 10 boxes. "Only once I started using Stitch Fix did I realize how much of a difference it could make just to feel confident that I was dressed nicely," says the 52-year-old Boston-area freelance writer. Her stylist perfectly understands her request for "age-appropriate, casual, and cute," and she generally keeps two or three items from every Stitch Fix assortment.

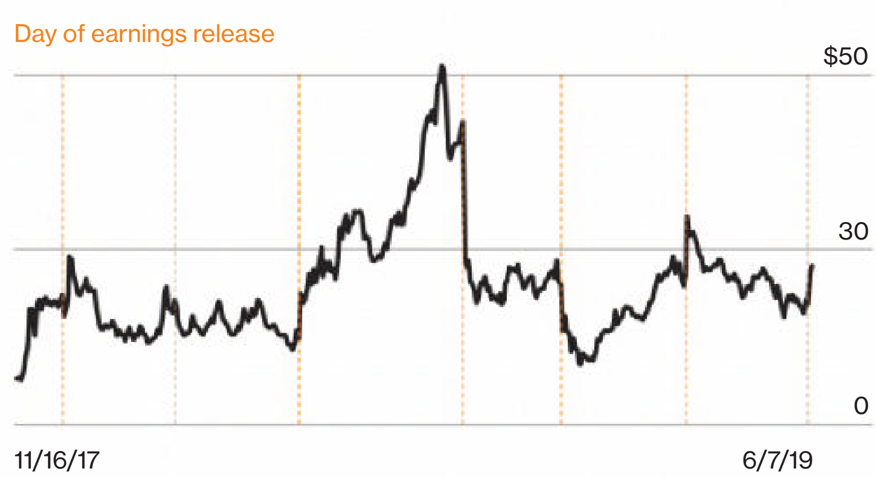
Customers—mainly women, although the company also caters to men and children—receive their packages after filling out a style profile so Stitch Fix can figure out what they like. For the $20 styling fee they get a selection of five pieces in their price range, chosen by a stylist based on the algorithm's suggestions. They can buy what they like and return the rest. (The $20 fee is applied toward the purchase price, and users get a discount for buying everything in the box.) The more a person uses the service, the better it gets at nailing her look.

If this sounds something like Netflix, that's by design. The streaming service's former vice president for data science, Eric Colson, joined Stitch Fix as chief algorithms officer in 2012. (He's now CAO emeritus.) Just as Netflix Inc. uses one movie as the basis to sometimes recommend a seemingly unrelated one, Stitch Fix looks at detailed attributes to figure out that a customer who typically likes conservatively cut blazers and dresses might go for a black leather motorcycle jacket in her next order. (The unexpected link: She'd been buying more mixes of prints and patterns, indicating an edgier streak.)

Lake already was drawn to this type of expertise as an undergraduate. A data geek, she wrote her honors thesis at Stanford on econometrics and health results, and ▶

Stuck in a Rut

Stich Fix share price



DATA: COMPILED BY BLOOMBERG

◀ thus can throw around terms like "multivariate regression" in the same breath as "scalloped edge." In a consulting job after college that involved working with EBay Inc., she saw how even the biggest troves of statistics lacked power unless they were organized and analyzed the right way. "They had just tons and tons of unstructured data that was really hard to parse out and make useful," she says. "It was so hard to unlock it." By the time she started Stitch Fix in her Cambridge apartment while an MBA student at Harvard, she knew she needed to place as much emphasis on data as on style. (A co-founder, Erin Flynn, sued the company in 2012, alleging breach of contract and wrongful termination; the case was settled in 2014, and Flynn is no longer with the company.)

From its beginnings, Stitch Fix gathered information that matters about customers, says Chief Operating Officer Mike Smith, a Walmart.com alumnus. "They give us data about their bra size," he says. "They give us data about how a pair of pants feels on their thighs." Tidbits like that help the company refine its take on what will delight customers and keep them coming back and spending more.

Stitch Fix doesn't define "high-quality customers" by how many times a year they shop, but by how much they spend. The company aims to boost the average annual spend per customer: It's $467 today, up from $443 six months ago. That focus on customer spend per order was one reason for Stitch Fix's expansion into the U.K. earlier this year, its first foray outside the U.S., despite the uncertainty caused by Brexit. People there purchase consistently online and don't expect the same deep discounts U.S. customers look for.

Another challenge to enticing customers to spend more comes from managing the physical supplies of the products the algorithms recommend. "Inventory flows SUCK and no one cares," wrote one Cleveland-based stylist earlier this year on workplace review site Glassdoor. The company says it's taking steps to improve the availability of popular clothing.

As to the fear of retail-killer Amazon, Lake has in the past spoken about how, despite its millions of available pieces of clothing, the online giant can't figure out which garments are best for each customer. That's a problem Stitch Fix solves, she says. Usually, she leaves the Amazon-bashing to Smith. "We're not in the cloud, we're not in logistics, we're not in movie studios," he says in a not-so-subtle jab at his competitor's many business lines. "Delivering against expectations will continue to help with the story." ——*Sarah McBride*

THE BOTTOM LINE Like Netflix, Stitch Fix looks at a user's detailed attributes to come up with sometimes unexpected choices. Customers love its selections, but investors may still need convincing.

An Austrian Dirt Bike Maker Goes Global

After overtaking Harley last year, KTM aims to pull ahead of Kawasaki to become No. 3 in full-size motorcycles

In 1991, Stefan Pierer took over KTM, a failing Austrian manufacturer of motorcycles trying to counter aggressive rivals from Japan. A no-nonsense turnaround expert who at age 35 had already revived and auctioned off makers of ski boots and building materials, Pierer figured he'd spend a few years fixing KTM before moving on to the next challenge. Fast forward 28 years, and KTM is building as many bikes in a week as it did in the whole year when Pierer took over. It just surpassed Harley-Davidson Inc. as the leading motorcycle maker outside of Asia. And Pierer is still in charge, with a fortune valued at more than $1 billion thanks to his success at KTM. "The quality at the time was so poor we were mocked," he says. "But every crisis is also an opportunity."

KTM is now gunning to become one of the top three manufacturers of full-size motorcycles. In the past decade, Pierer has more than quadrupled sales even as the European market for two-wheelers shrank by 14%. He says new designs and a greater focus on Asia will help him reach annual sales of 400,000 by 2022, which would put him within striking distance of today's No. 3, Kawasaki Motors Co.

Still, by many measures KTM remains a bit player. Although last year it sold 261,000 bikes—35,000 more than Harley did—the American company generates three times KTM's revenue of $1.75 billion, because most of its bikes are far more expensive. Including smaller models such as mopeds and scooters, KTM is still behind Piaggio Group (the maker of Vespa) in Europe. And globally it's an also-ran. Honda Motor Co., for instance, sold 20 million two-wheelers last year, and No. 2 Yamaha Motor Co. sold 5.4 million. Being based in Europe presents assorted challenges: Sales in the region have stagnated since 2010, at about 1 million bikes per year, and stricter rules on emissions and noise threaten to further depress them. "Making motorbikes cleaner and quieter costs a lot of money, and so does developing electric engines," says Jürgen Pieper, an analyst at Bankhaus Metzler in Frankfurt. "A brand like KTM that's known for sports and racing may find it difficult to maintain its image while adopting more environment-friendly technologies."

KTM dominates Mattighofen, the town of 6,000 just south of the German border where it was founded in 1934. As Austria emerged from the rubble of World War II, KTM churned out inexpensive, durable two-wheelers to help a broken nation hit the road again. Over the next four decades, founder Hans Trunkenpolz and his son Erich built KTM into a national icon with bikes suited to Austria's rugged Alpine terrain. But when Erich died on Christmas Eve in 1989 at age 57 with no heirs, the company ended up in the hands of outside investors with little industry knowledge who soon rode it into insolvency.

Enter Pierer, who'd been introduced to KTM by acquaintances working with the company. He paid only $4 million ($7 million today) and quickly dropped mopeds and street bikes to focus on off-road motorcycles. In 1993 he sent a team on the three-week Paris-Dakar rally, an unforgiving trek across the Sahara Desert. After a bumpy start, KTM has won the competition every year since 2001, creating a mystique that's made the bikes must-haves for motocross fans worldwide.

Pierer reintroduced road models two decades ago, and today they make up about half of sales. Then in 2007 he formed a partnership with India's Bajaj Auto Ltd. The company is the world's largest maker of three-wheelers—used as taxis in developing countries—but it lacked technologies such as four-stroke engines, fuel injection, and anti-lock brakes. In exchange for updating Bajaj's offerings, KTM gained a manufacturing base with wages just a fraction of those in Austria and a strong dealership network in the world's biggest market for motorcycles. The companies are developing small electric models to be built in India and sold under both brands.

In 2013, Pierer spotted an opportunity to supercharge his expansion: buying Husqvarna from BMW AG, which had bought the Swedish nameplate a few years earlier but decided the off-road brand didn't fit the German company's lineup of highway rockets. Husqvarna helped KTM achieve something akin to the auto industry's strategy of making multiple models based on almost identical parts. The two brands today share engines, suspensions, gearboxes, and other components but retain separate identities vis-à-vis consumers. "KTM and Husqvarna are rivals on the racetrack and when it comes to sales," Pierer says. "For everything else, they are family."

His aim now is to do something similar with Ducati, the spicy Italian nameplate that Volkswagen AG is considering selling, and Triumph, a venerable British brand that's been struggling to sustain its growth. The companies each sold about 60,000 motorcycles last year—too small, Pierer says, to effectively compete. He's seeking tieups that would benefit all parties by spreading development costs across a larger number of bikes. "We're savaging ourselves in Europe," Pierer says. "Let's create a united European motorcycle company." Triumph says it has no plans to sell.

Pierer has made his share of missteps. A partnership with U.S. off-road vehicle maker Polaris Industries Inc., which owns the classic Indian Motorcycle brand, foundered over strategic differences. KTM's first four-wheeler, a $135,000 roadster called the X-Bow that was introduced in 2007, never really took off. Dealers say aggressive sales targets in recent years have required heavy discounts to move inventory, threatening the brand's value. And Pierer missed an opportunity to buy KTM's bicycle business, which is now thriving under a separate owner.

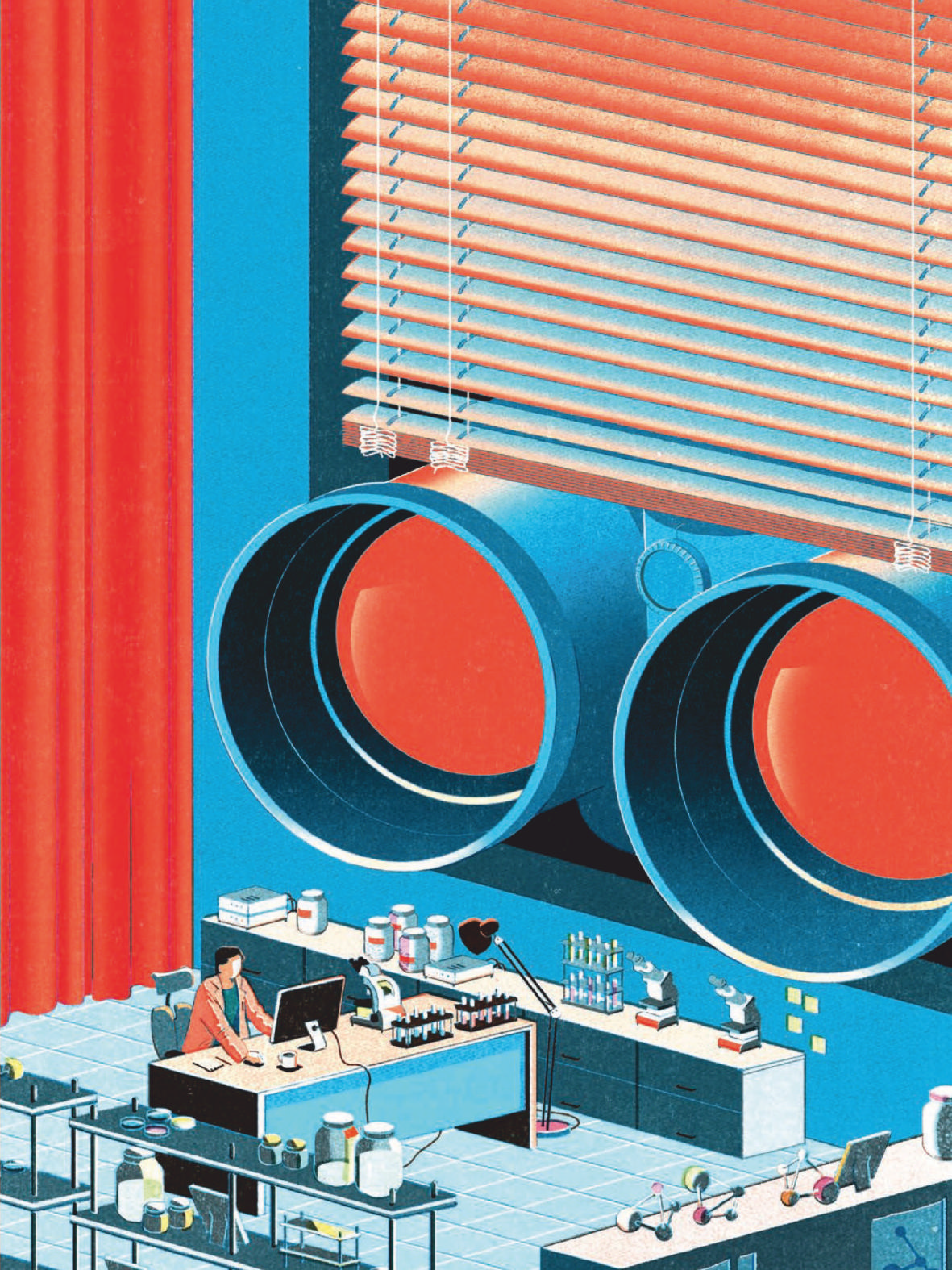
The pedal-bike unit would have given Pierer a stronger foothold in electric bikes, which he expects to account for

KTM's factory in Mattighofen, where the company was founded in 1934

the bulk of commuter cycles within five years. Although he's sold 5,000 full-size electric motorcycles since 2014, he says the technology is expensive and ill-suited to such bikes, because the high voltage needed to power them can be dangerous. But he predicts that about a quarter of KTM's 2025 revenue will come from battery-powered mopeds and pedal-electric cycles. "E-bikes are becoming a huge deal," Pierer says. "The market has exploded, and as a large manufacturer, you have to be there."
——*Richard Weiss, with Matthias Wabl*

THE BOTTOM LINE KTM's purchase of Husqvarna and its cooperation with India's Bajaj have helped it cut costs and expand sales. The company says forging similar ties with Triumph and Ducati would benefit all parties.

MICHAELA HANDREK-REHLE/BLOOMBERG



THE NEW RED SCARE

The National Institutes of Health and the FBI are purging Chinese scientists from U.S. research institutions. Civil liberties issues aside, this is no way to cure cancer

By Peter Waldman

Illustration by Jee-ook Choi

The dossier on cancer researcher Xifeng Wu was thick with intrigue, if hardly the stuff of a spy thriller. It contained findings that she'd improperly shared confidential information and accepted a half-dozen advisory roles at medical institutions in China. She might have weathered those allegations, but for a larger aspersion that was far more problematic: She was branded an oncological double agent.

In recent decades, cancer research has become increasingly globalized, with scientists around the world pooling data and ideas to jointly study a disease that kills almost 10 million people a year. International collaborations are an intrinsic part of the U.S. National Cancer Institute's Moonshot program, the government's $1 billion blitz to double the pace of treatment discoveries by 2022. One of the program's tag lines: "Cancer knows no borders."

Except, it turns out, the borders around China. In January, Wu, an award-winning epidemiologist and naturalized American citizen, quietly stepped down as director of the Center for Public Health and Translational Genomics at the University of Texas MD Anderson Cancer Center after a three-month investigation into her professional ties in China. Her resignation, and the departures in recent months of three other top Chinese American scientists from Houston-based MD Anderson, stem from a Trump administration drive to counter Chinese influence at U.S. research institutions. The aim is to stanch China's well-documented, costly theft of U.S. innovation and know-how. The collateral effect, however, is to stymie basic science, the foundational research that underlies new medical treatments. Everything is commodified in the economic cold war with China, including the struggle to find a cure for cancer.

Behind the investigation that led to Wu's exit—and other such probes across the country—is the National Institutes of Health, in coordination with the FBI. "Even something that is in the fundamental research space, that's absolutely not classified, has an intrinsic value," says Lawrence Tabak, principal deputy director of the NIH, explaining his approach. "This pre-patented material is the antecedent to creating intellectual property. In essence, what you're doing is stealing other people's ideas."

The NIH, the world's biggest public funder of basic biomedical research, wields immense power over the nation's health-research community. It allocates about $26 billion a year in federal grants; roughly $6 billion of that goes to cancer research. At a June 5 hearing, NIH officials told the U.S. Senate Committee on Finance that the agency has contacted 61 research institutions about suspected diversion of proprietary information by grant recipients and referred 16 cases, mainly involving undisclosed ties to foreign governments, for possible legal action. Ways of working that have long been encouraged by the NIH and many research institutions, particularly MD Anderson, are now quasi-criminalized, with FBI agents reading private emails, stopping Chinese scientists at airports, and visiting people's homes to ask about their loyalty.

Wu hasn't been charged with stealing anyone's ideas, but ▶

◀ in effect she stood accused of secretly aiding and abetting cancer research in China, an un-American activity in today's political climate. She'd spent 27 of her 56 years at MD Anderson. A month after resigning, she left her husband and two kids in the U.S. and took a job as dean of a school of public health in Shanghai.

Wu in her former office at MD Anderson

MAY ZHOU/CHINA DAILY

This is the first detailed account of what happened to Wu. She declined to be interviewed for this article, citing a pending complaint she's filed with the U.S. Equal Employment Opportunity Commission. Her story is based on interviews and documents provided by 14 American colleagues and friends and records obtained through the Texas Public Information Act.

Historians will have to sort out whether Wu's story and others like it marked a turning point when U.S. research institutions got serious about China's avarice for American intellectual property, or a dangerous lurch down the path of paranoia and racial profiling. Or both. In any case, recent events in Houston and elsewhere indicate that Chinese people in America, including U.S. citizens, are now targeted for FBI surveillance.

In an April speech in New York, FBI Director Christopher Wray described the reason for the scrutiny of ethnic Chinese scientists. "China has pioneered a societal approach to stealing innovation in any way it can from a wide array of businesses, universities, and organizations," he told the Council on Foreign Relations. Everyone's in on it, Wray said: China's intelligence services; its state-owned and what he called "ostensibly" private enterprises; and the 130,000 Chinese graduate students and researchers who work and study in the U.S. every year. "Put plainly, China seems determined to steal its way up the economic ladder at our expense."

Wray's rhetoric has caused deep anxiety in the Chinese American community, "because so many have been questioned by the FBI," says Representative Judy Chu, the California Democrat who chairs the Congressional Asian Pacific American Caucus. "I'm very concerned about whether this ultimately leads to an erosion of Chinese Americans' civil rights."

Wu graduated from medical school in Shanghai and earned her Ph.D. in 1994 from the University of Texas School of Public Health in Houston. She joined MD Anderson while a graduate student and gained renown for creating several so-called study cohorts with data amassed from hundreds of thousands of patients in Asia and the U.S. The cohorts, which combine patient histories with personal biomarkers such as DNA characteristics and treatment descriptions, outcomes, and even lifestyle habits, are a gold mine for researchers. (Some examples of the use of cohorts: Wu and her team showed that Mexican Americans who sleep less than six hours a night had a higher risk of cancer than Mexican Americans who get more sleep, and that eating charred meat such as barbecue raised the risk of kidney cancer.) In 2011, Wu leapfrogged over older colleagues and was named epidemiology chair, making her the top-ranked epidemiologist at the nation's top-ranked cancer center.

Along the way, Wu developed close ties with researchers and cancer centers in China. She was encouraged to do so by MD Anderson. The center's president in the early 2000s, John Mendelsohn, launched an initiative to promote international collaborations. In China, MD Anderson forged "sister" relationships with five major cancer centers, cooperating on screening programs, clinical trials, and basic research studies. Dozens of ethnic Chinese faculty members at MD Anderson participated, eager to visit family and friends and contribute their expertise to addressing China's enormous burden of about 4.3 million new cancer cases a year. In 2015, China awarded MD Anderson its top honor for international scientific cooperation, in a ceremony attended by President Xi Jinping.

Wu was a model collaborator. She attended Chinese medical conferences, hosted visiting Chinese professors in Houston, and published 87 research papers with co-authors from 26 Chinese institutions. In all, she has co-authored some 540 papers that have been cited about 23,000 times in scientific literature. (Her papers are all easily retrievable with a few clicks on MD Anderson's website.)

"MD Anderson was very much an open door. The mission was 'End cancer in Texas, America, and the world,'" says Oliver Bogler, the cancer center's senior vice president for academic affairs from 2011 to 2018 and now chief operating officer of the ECHO Institute at the University of New Mexico.

The globalization of science, in particular basic science, has been sweeping. "Faculty don't see international borders anymore," says Adam Kuspa, dean of research at Baylor College of Medicine in Houston. "If someone in another country has a piece of the puzzle, they want to work with them." Relationships often begin at academic conferences, jell during invited visits for symposiums or lectureships, and culminate in the melding of research into scientific papers. Since 2010 the NIH itself has offered about $5 million a year in special grants for U.S.-China collaborations, with 20% going to cancer research, and a counterpart in China has pitched in an additional $3 million a year. The joint projects have produced a number of high-impact papers on cancer, according to an internal NIH review.

For Kirk Smith, a professor at the University of California at Berkeley who studies the health effects of air pollution, the benefits of collaboration have been surprising. He never imagined, back in the 1980s when he started researching Chinese air pollution with Chinese scientists, that one day his colleagues would become influential policymakers at home. In the past six years, Smith's partners have pushed through

The contest is being waged, the FBI director said, and

standards that have led to air pollution reductions of 21% to 42% in China's most populous areas. The results have borne fruit in the U.S., too. Twenty years ago scientists forecast that air pollution from China, blowing across the Pacific, would cause California to exceed its clean-air standards by 2025. Now that won't happen, says Smith, who was granted an honorary professorship at Tsinghua University this spring.

Wu's work, like a lot of the academic research now in danger of being stifled, isn't about developing patentable drugs. The mission is to reduce risk and save lives by discovering the causes of cancer. Prevention isn't a product. It isn't salable. Or stealable.

Suspicion of Chinese scientists at MD Anderson began to take root around 2014. The year before, a Chinese researcher at the Medical College of Wisconsin in Milwaukee had been arrested on federal charges of economic espionage; prosecutors said he stole three vials of a cancer drug in early-stage lab testing. (He pleaded guilty to the far lesser charge of accessing a computer without authorization and was sentenced to time served, four and a half months.) At the time, MD Anderson was pushing to commercialize basic research into cancer drugs; today the center has alliances and partnerships with almost three dozen pharmaceutical makers and other private companies. Security was enhanced. Foreign guests were kept on a short leash.

The chain of events that ultimately led to Wu's departure began in the summer of 2017, when the FBI notified the cancer center it was investigating "the possible theft of MD Anderson research and proprietary information." (MD Anderson declined to speak about the FBI investigation except to say it did not report theft of intellectual property to the bureau.) A federal grand jury followed up with a subpoena for five years of emails from some MD Anderson employees. A few months later, the center gutted its international research program and put what was left of its collaborative-project arm under a business department. Bogler and former colleagues within the center say the focus then shifted away from research collaborations and toward business opportunities. MD Anderson spokeswoman Brette Peyton said in an email that the center's global programs haven't changed.

In November 2017 the FBI asked for more information. This time, no subpoena followed. Instead, the cancer center's president, Peter Pisters—then on the job for barely a month—signed a voluntary agreement allowing the FBI to search the network accounts of what a separate document indicated were 23 employees "for any purpose…at any time, for any length of time, and at any location." Did all of the network accounts handed over to the FBI belong to Chinese or Chinese American scientists? MD Anderson refuses to say.

"Because MD Anderson was cooperating with the FBI's national security investigation, and because the FBI had the power to issue another subpoena, we chose to voluntarily provide the requested emails," Peyton said.

In Wray's telling, China's challenge to the U.S. today is unlike any this nation has faced. Whereas the Cold War was fought by armies and governments, the contest is being waged, on China's side, by the "whole of society," the FBI director said, and the U.S. needs its own whole-of-society response. But what does that look like in a society with more than 5 million citizens of Chinese descent, many of whom work in the very science and technology fields said to be under assault?

The FBI is telling companies, universities, hospitals—anyone with intellectual property at stake—to take special precautions when dealing with Chinese business partners and employees who might be what Wray calls "nontraditional" information collectors. U.S. Department of Justice officials are doing road shows to brief local governments, companies, and journalists about China's perfidy. Visas for Chinese students and researchers are being curtailed, and more Chinese engineers and businesspeople, especially in the tech sector, are being detained at U.S. airports while border agents inspect and image their digital devices. The FBI is pursuing economic espionage investigations "that almost invariably lead back to China" in almost every one of its 56 field offices, Wray said.

They've made some big arrests. Last year the agency lured an alleged spymaster affiliated with China's Ministry of State Security to Belgium, where he was arrested and extradited to the U.S. to face espionage charges. The suspected agent, named Yanjun Xu, allegedly disguised himself as an academic and used LinkedIn to entice a Chinese American engineer at GE Aviation in Cincinnati to come to China to give a presentation on composite materials for the aerospace industry. The engineer brought along some of his employer's confidential documents. Xu pleaded not guilty in October and remains in custody in Ohio awaiting trial. The GE Aviation employee wasn't charged.

Federal agents have also made an alarming number of spy arrests that proved unwarranted. From 1997 to 2009, 17% of defendants indicted under the U.S. Economic Espionage Act had Chinese names. From 2009 to 2015, that rate tripled, to 52%, according to a December 2018 article in the *Cardozo Law Review*. As the number of cases soared, evidence of actual espionage lagged behind. One in five of the Chinese-named defendants was never found guilty of espionage or any other serious crime in the cases between 1997 and 2015—almost twice the rate of wrongful accusations among non-Chinese defendants. The disparity, wrote the paper's author, Andrew Kim, a visiting scholar at South Texas College of Law at Houston, reflects an apparent bias among federal agents and prosecutors who assume ethnic ▶

on China's side, by the "whole of society,"
the U.S. needs its own whole-of-society response

◀ Chinese scientists must be secretly working for China.

"In the same way racial profiling of African Americans as criminals may create the crime of 'driving while black,'" wrote Kim, who practices law at the Houston office of Greenberg Traurig, "profiling of Asian Americans as spies…may be creating a new crime: 'researching while Asian.'"

In 2015, FBI agents stormed the Philadelphia home of Xiaoxing Xi, a Temple University physicist, and arrested him at gunpoint in front of his wife and two daughters for allegedly sharing superconductor technology with China. The charges were dropped five months later, after Xi's lawyers proved the system in question was old and publicly available. But Xi says his life will never be the same. He lost most of his graduate students and research funding and remains preoccupied with fears that the government is still spying on him. "Seeing how such a trivial thing could be twisted into felony charges has had a dramatic psychological impact," he says. "I was doing academic collaboration that the government, the university, and all the funding agencies encouraged us to do."

Last spring, FBI agents in Houston, armed with a batch of emails from the 23 accounts, knocked on the doors of at least four Chinese Americans who worked at MD Anderson, asking whether they or others had professional links to China. The agents were particularly interested in scientists connected to China's Thousand Talents Plan, a government initiative to lure back top scholars from overseas with well-paid jobs in China. A report last year by the U.S. National Intelligence Council said the recruitment program's underlying purpose is "to facilitate the legal and illicit transfer of U.S. technology, intellectual property and knowhow" to China.

"I told them I wasn't going to snitch," says one person, who was surprised to find two agents at his back door one afternoon. They told him not to discuss the encounter, says the person, who asked not to be named, and inquired about joint research projects in China. He tried to explain that there are no secrets in basic science, because everything gets published. Over their two-hour talk, he says, the agents were less focused on national security issues—say, espionage or trade secret theft—than on the more soul-searching subject of loyalty. They wanted to know, in effect, are you now or have you ever been more committed to curing cancer in China than in the U.S.? An FBI spokesman wouldn't comment, but said in an email that the bureau can't initiate investigations "based solely on an individual's race, ethnicity, national origin or religion."

That June, MD Anderson gave the FBI another consent letter, this time permitting it to share any "relevant information" from the cancer center's employee accounts with the NIH and other federal agencies. That signaled a new focus for the ostensible national security investigation: compliance with federal grant requirements. It was here that Wu became a target.

In five memos addressed last fall to Pisters, MD Anderson's president, a top NIH official cited dozens of employee emails in claiming that Wu and four other scientists at the cancer center violated confidentiality requirements in grant reviews and failed to disclose paid work in China. "Because NIH awards generally are made to the institution and not the [researcher], we remind you of the gravity of these concerns," wrote Michael Lauer, NIH's deputy director for outside research. He gave Pisters 30 days to respond.

The investigations of the MD Anderson employees were handled by the center's compliance chief, Max Weber, and his boss, general counsel Steven Haydon. On the advice of her lawyer, Wu, who had an often-combative relationship with the administration, declined to be interviewed by Weber but submitted written responses to questions. In them she acknowledged lapses, but maintained they weren't duplicitous. She admitted sharing NIH grant proposals with U.S. colleagues—not to leak scientific secrets, she said, but to get help with her workload. Wu told Weber she used office administrators and more junior researchers to perform such tasks as downloading and printing grant proposals and typing and editing review drafts. Weber concluded that Wu's use of others to help with grant reviews violated MD Anderson's ethics policies.

If that's true, the position is at odds with common practice in academia. "If you searched through MD Anderson or any large research institution, you'd find people with these kinds of compliance issues everywhere," says Lynn Goldman, dean of the Milken School of Public Health at George Washington University. Assisting senior scientists with confidential grant reviews, a rite of passage for many younger researchers, is considered "part of the mentoring process" by older faculty members, Goldman says. "Is it wrong? Probably. Is it a capital offense? Hardly."

Wu also admitted failing to disclose to the NIH all the names and affiliations of her Chinese collaborators, as required in grant filings. She told Weber that was because she'd worked with many of them there in Houston, when they were visiting scientists at MD Anderson. At any rate, their affiliations in China were clearly noted in published papers. Weber concluded, in the report he submitted to Pisters, that visiting scientists were still "foreign components" and must be disclosed.

Wu acknowledged accepting various honorary titles and positions in China, such as advisory professor at Fudan University, her alma mater—but she wasn't paid, she said. She produced emails showing she twice withdrew from Thousand Talents consideration, because the positions entailed too much travel. In his report, Weber wrote that Wu failed to disclose compensated work at several Chinese cancer centers. He offered no proof that she'd been paid, but included potential salary amounts for certain positions in his report, conditioned on "actual work performed," he wrote. He offered no evidence that she did any work.

In the end, Weber based most of his conclusions on "adverse inferences" he drew from Wu's insistence on responding to his questions in writing. For example, he cited a 2017 article on the website of Shanghai's Ruijin Hospital that said Wu had been honored at a ceremony after signing a contract to become a visiting professor. "Given Wu's failure to appear at her interview, I infer that this fact is true," Weber wrote.

“Innocent yet meaningful scientific collaborations have been portrayed as somehow corrupt and detrimental to American interests. Nothing could be further from the truth”

Yet a week after that article appeared, Wu emailed Ruijin Hospital’s president to say she couldn’t accept the appointment before clearing it with MD Anderson’s conflict-of-interest committee. Twelve days later, she emailed him a draft consulting contract that specified the pact was subject to all rules and regulations of MD Anderson, including those related to intellectual property. “If you agree, I will submit it to our institution for review,” Wu wrote. The Chinese hospital did agree, and she submitted the draft contract to MD Anderson. She never heard back from the conflict-of-interest panel before resigning.

Weber didn’t mention either email in his report. Wu was placed on unpaid leave pending disciplinary action, including possible termination. She quit on Jan. 15. Wu didn’t exercise her right to challenge Weber’s findings at a faculty hearing, Peyton said. “Subsequent protestations of innocence are unfortunate.” Weber didn’t respond to a request for an interview.

To friends and many colleagues, Wu’s case represents overkill. There was no evidence, and no accusation, that she’d given China any proprietary information, whatever that term might mean in cancer epidemiology. She should have been given the chance to correct her disclosures without punishment, her supporters say. “Innocent yet meaningful scientific collaborations have been portrayed as somehow corrupt and detrimental to American interests. Nothing could be further from the truth,” says Randy Legerski, a retired vice chair of MD Anderson’s genetics department and former chair of its faculty senate. Adds Goldman of George Washington: “The only thing we’ve lost to China is our investment in Xifeng Wu.”

In an interview, Pisters wouldn’t comment on any of the five investigations of Chinese researchers, but said MD Anderson had to act to protect its NIH funding, which reached $148 million last year. The cancer center has a “social responsibility” to taxpayers and its donors to protect its intellectual property from any country trying “to take advantage of everything that is aspirational and outstanding in America,” he said.

On a Saturday this March, about 150 ethnic Chinese scientists and engineers packed a University of Chicago conference room for a panel discussion titled, “The New Reality Facing Chinese Americans.” Speakers from the FBI and U.S. attorney’s office assured everyone that multiple layers of government review ensure agents follow the law, not prejudices.

Panelist Brian Sun, partner-in-charge of the Los Angeles office of Jones Day, shot back that prosecutors’ inflammatory rhetoric in Chinese spying cases has repeatedly stoked public fear, only to have prosecutions collapse. The audience gasped when he described the failed espionage indictment of National Weather Service hydrologist Sherry Chen, who was charged in 2014 with accessing data on U.S. dams to give China. At one point prosecutors said the information could possibly be used during wartime to cause mass murder by blowing up the embankments. It turned out that federal investigators knew Chen had legitimate work reasons to retrieve the dam information, and she never passed any of it to China.

“That’s the kind of shit we deal with,” Sun said. “Don’t rush to judgment, and do your homework before you charge.”

Nancy Chen, a retired federal employee, closed the meeting by raising the unspoken dread in a room full of scholars familiar with the long history of U.S. laws and executive orders aimed at Asian immigrants. “The greatest fear is that history may repeat itself in this political climate, and Chinese Americans may be rounded up like Japanese Americans during World War II,” she said. “The fear and worry is real.”

The FBI agent thanked Chen for her comments and said the “atmospheric” information is always good to know.

So far, MD Anderson and Emory University, which fired two Chinese American professors in May, are the only U.S. research institutions known to have parted company with multiple scientists over alleged breaches of NIH disclosure rules. The University of Wisconsin at Madison rebuffed an FBI request for computer files of a Chinese American engineering professor without a subpoena, according to a person familiar with the matter. Yale, Stanford, and Berkeley, among other institutions, have published letters of support for Chinese faculty members and research collaborations. “An automatic suspicion of people based on their national origin can lead to terrible consequences,” wrote Berkeley Chancellor Carol Christ in February.

Baylor College of Medicine, located next door to MD Anderson at Houston’s Texas Medical Center, received NIH inquiries about four faculty members. It didn’t punish anyone, but used the opportunity to correct past disclosure lapses and educate faculty members about more rigorous enforcement going forward, says Kuspa, the school’s research dean. Local FBI activity has rattled enough nerves already, he says. “Chinese scientists have come to me shaking.”

After attending several FBI briefings on the China threat, Kuspa wonders if the bureau understands how long and painstaking cancer research is. It can take two decades from discovery of a promising molecule to approval of a chemotherapy drug. Even then, progress in cancer treatment is measured in months of life, seldom in years. How much basic cancer research could China really steal?

“I joke with my boss after those FBI meetings, ‘Darn, I guess the Chinese are going to cure cancer. I’ll buy that pill,’” Kuspa says. “Isn’t that what we’re supposed to do—educate the entire world to have a fact-based approach to health?” Ⓑ

—With Lydia Mulvany and Selina Wang

ANY GIVEN THURSDAY AFTER-NOON

By Christopher Palmeri
Photographs by Jessica Chou

Tucker Roberts, Pennsylvania princeling, heir apparent to Comcast, is leading the family business into e-sports

(Not pictured: Carpe and snillo)

When the Philadelphia Fusion plays, the team president, Tucker Roberts, likes to stay in the dugout, alongside the coaches and bench players. He hangs out there as long as the team is winning. But if things start to go poorly, he heads onto the arena floor to pace among the fans banging on inflatable thunder sticks. If that doesn't help, and a loss feels imminent, Roberts parks himself in a backroom, next to the Fusion's social media editors, who are crafting online videos for supporters at home.

"It's basic feng shui," Roberts says. "If your environment isn't working for you, you have to change it."

The mix of restlessness, bile, and foreboding he feels would be familiar to the owners of pro football and basketball teams. But despite his family's great wealth—Roberts's father is chairman and chief executive officer of Comcast Corp., the cable giant that owns NBCUniversal and the NHL's Philadelphia Flyers, among other businesses—his angst isn't tied up with the fortunes of a major sports team. Fusion players compete in *Overwatch*, a frenetic video game, an e-sport, in which squads of professionals (six per side) launch grenades and blast cannons at one another, counting kills and respawning as needed. During games, players wear short-sleeve jerseys—orange-on-black for home games, orange-on-white for away—with their nicknames on the back. If bowling shirts still exist in the 22nd century, they will look like these.

The Fusion's roster is stacked with talent from Europe and e-sports powerhouse South Korea. Despite missing the preseason last year because several players had visa problems, the team almost won the championship, losing in the finals to the London Spitfire. "We came in with expectations that were, like, Let's just get some wins, let's not try to make the playoffs," Roberts says. "And then once we got there, it was like we were playing with house money." During the off-season, he beefed up the team's coaching staff, in the hopes of making another playoff run.

Comcast's decision, two years ago, to pay a $20 million franchise fee through its Comcast Spectacor division to start the Fusion was the first of several big e-sports bets in which Roberts played a role. In February he and Park Jung-Ho, CEO of South Korean mobile phone giant SK Telecom Co., announced they were forming a venture to field teams that will play *Fortnite*, an *Overwatch* competitor, among other titles. Then in March, Comcast revealed plans to build a $50 million arena for the Fusion in South Philadelphia. With a planned capacity of 3,500 fans, it will serve as a sort of sister arena to the 20,000-seat Wells Fargo Center that Comcast already owns, which will host this year's *Overwatch* championship. Architectural renderings suggest the interior will feature many screens.

Roberts, who's tall, thin, and athletic, also recently began dating Olivia Munn, an actress who has a cult following among gamers from her days as a host on the now-defunct video game TV network G4. Roberts won't talk about the relationship except to say that he admires Munn's business acumen. "She invested early in Uber and Wag," a dog-walking app, he says.

The idea of building a long-term enterprise around people

1

watching other people play video games is no sure thing, but Comcast isn't alone in its enthusiasm. The prize money in e-sports can reach into the millions of dollars, and researcher Newzoo BV expects overall revenue to climb 27% this year, to $1.1 billion, thanks to increased ticket sales, corporate sponsorships, and media rights deals. (Comcast is currently considering offers for naming rights for Fusion Arena.) Among the new owners of video game teams: basketball great Michael Jordan, Dallas Cowboys owner Jerry Jones, and Atlanta's Cox Communications.

Roberts, who's 29, sees the Fusion as part of a larger strategy to win over young people. E-sports could be to Generation Z what music videos were to Generation X, and Comcast, if all goes well, will be the MTV of this era.

When Roberts was growing up in Philadelphia's Chestnut Hill neighborhood, his dad's company, then a regional cable carrier, was almost universally recognized, if not exactly beloved. "Having a nightmare Comcast story is practically a residency requirement in this town," *Philadelphia* magazine once wrote. Neighborhood service centers were seen as crucibles of human frustration where impassive representatives faced customer meltdowns from behind barriers of bulletproof glass.

It may not be surprising then that Tucker—whose full name is Brian Leon Tucker Roberts Jr.—immersed himself in galaxies far, far away. He read *Harry Potter* novels and played games. Brian Sr. took the 8-year-old Tucker to the King of Prussia mall for a *Pokémon* tournament, where he advanced five rounds before coming up against a 28-year-old rival who, as Tucker remembers it, was then getting a doctorate at the University of Pennsylvania. Tucker cried when he lost.

In middle school, Roberts became obsessed with an online game called *Star Wars Galaxies*. He played as Kiey Ekips, a Zabrak bounty hunter, on the Scylla server and eventually joined a guild. Over time he helped build cities on Tatooine and Naboo, a planet in the Chommell sector. Along the way, he made some friends. "I'm hanging out with a bunch of 30-year-olds who are some German dudes, and they don't know I'm 13, and they're just treating me like another person," Roberts says. On the internet, nobody knows if you're the heir to an omnivorous cable empire.

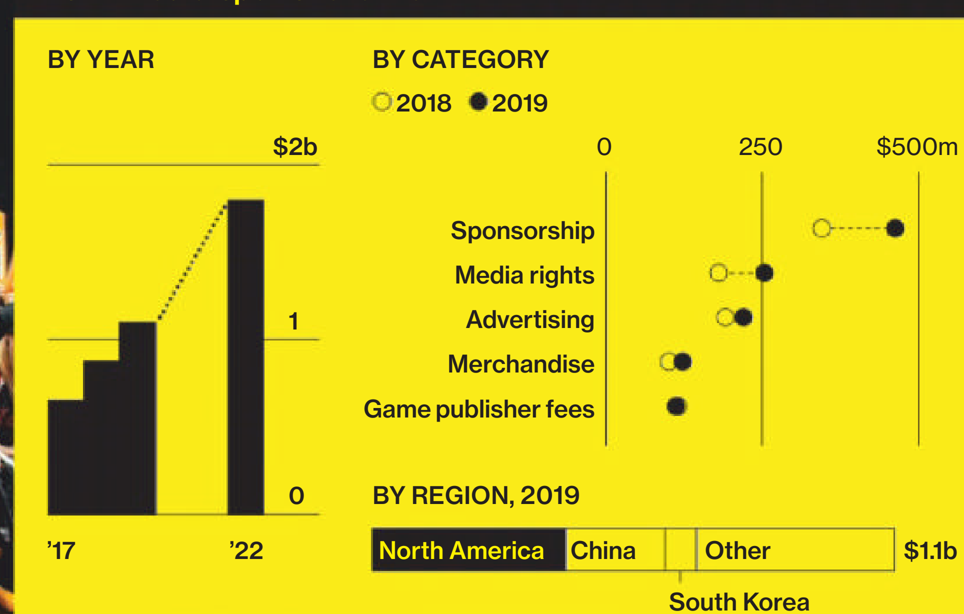
Escaping the family shadow was a little harder in college. Like his father and grandfather, Roberts attended the University of Pennsylvania, where he studied business. On campus at the time, school officials were just completing ▶

2

1 The squad takes the field on March 22
2 Telestration, e-sports edition
3 Fans cheer on the Fusion in their battle against the Atlanta Reign
4 *Overwatch* is not exactly a contact sport

3

Estimated e-sports revenue



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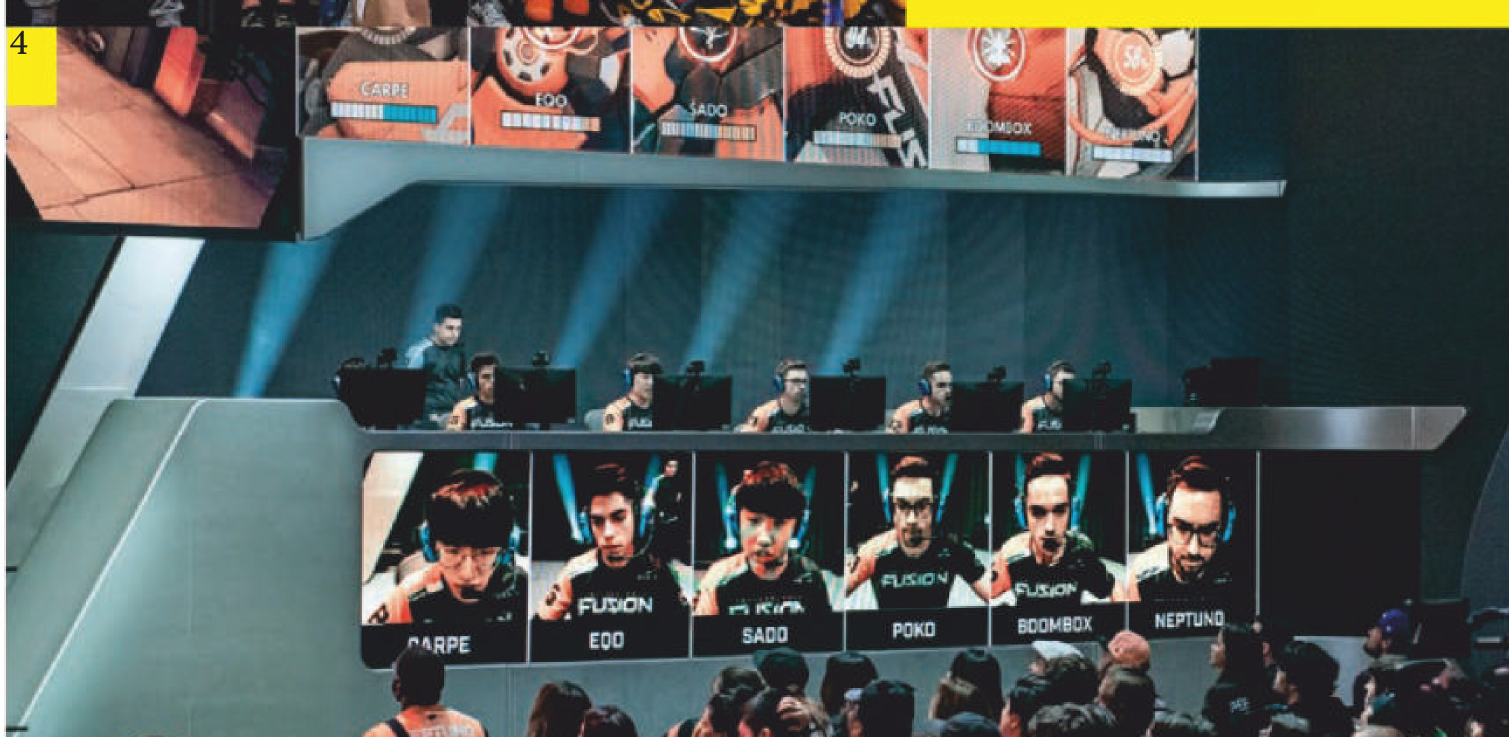
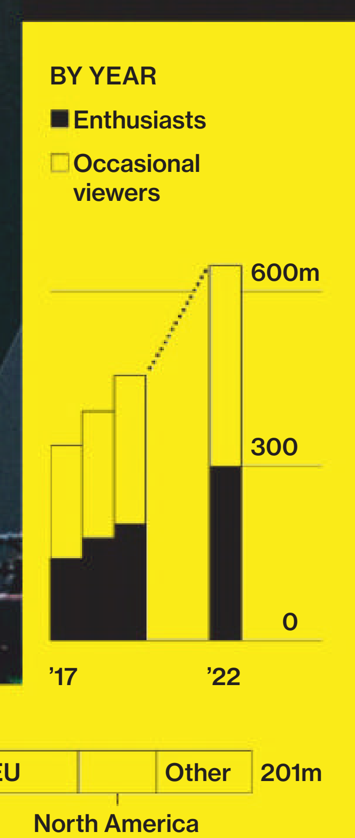


Estimated audience



DATA: NEWZOO

“We don’t have to compete in just one game. We’re not just talking about, like, ice hockey, where it’s only popular in kind of cold regions. Everybody plays video games in every single country, and so that’s going to continue to be the glue that connects people”

◀ construction of the Roberts Proton Therapy Center, a 75,000-square-foot cancer-treatment facility, supported by his family’s philanthropy.

Roberts got an early peek at the future of e-sports during an internship at Activision Blizzard Inc. After college, in 2013, he took a job at game maker Electronic Arts Inc., where he helped put *The Sims* game on the Apple Watch. His corporate Rumspringa complete, Roberts joined his dad in 2016, taking a job at Comcast’s venture capital arm in San Francisco. E-sports teams had recently become a hot investment, and Activision CEO Bobby Kotick decided to create a professional league built around *Overwatch*, the company’s 2016 shooting game, in which a well-armed cast of gifted and talented bioluminescent characters (a freedom-fighting DJ, a transcendentally empowered monk) duel for pyrotechnic dominance over a future version of Earth that’s been ravaged by insubordinate robots.

The league struck a TV deal with Walt Disney Co. to air games on ABC and ESPN, and it arranged for the new owners, Comcast among them, to share revenue. Players would be guaranteed health care and a $50,000 minimum salary. (Most players earn a lot more; six-figure salaries are common.) Like the other 19 teams now in the league, including squads representing Shanghai and Paris, the Fusion would be based in Los Angeles for the first two seasons, playing all their games at the Blizzard Arena, a retrofitted studio in Burbank where *The Tonight Show* once taped. In 2020 the teams will relocate to their respective home cities.

To prepare for the move, Roberts has been trying to endear the Fusion to Philly sports fans, or at the very least let fans know the team exists. Last season, Comcast produced a promotional video in which players wore dog masks, in the disquieting tradition of Philadelphia Eagles fans, and spray-painted the word “Fusion” on a wall. The nod to vandalism aside, Fusion supporters are abnormally well-behaved, at least by the standards of their hometown. Nobody has thrown batteries at opponents, or intentionally vomited on any off-duty police officers, or assaulted a mascot—exploits that have been credited to Eagles and Phillies fans. Unlike the old Veterans Stadium, Fusion Arena will not come equipped with an in-house jail.

What it will have, it seems, is Gritty—the orange-fuzzed, googly-eyed, and exhaustively memed mascot of the Comcast-owned Flyers. At the *Overwatch* season opener on Valentine’s Day, fans went wild when Gritty showed up to lead a conga line of Fusion video game athletes into the arena. Gabrielle Egan, a 20-year-old student from Philadelphia, who’d flown to Los Angeles with a friend to attend the event, was in the spirit. “It’s the come-from-behind Philly toughness,” she said. For those fans unable to make cross-country trips, Comcast has organized meetups at local bars and restaurants that televise the contests.

Comcast has also invested in N3rd Street Gamers LLC, which runs amateur tournaments in cities across the U.S. It’s part of a strategy to educate parents about the sport, according to Roberts. “I think a lot of parents never played games, never were a gamer,” he says. “So there’s been a shift of, like, ‘Oh my God, *Grand Theft Auto* is the devil. Video games are rotting your brain,’ right? And now the conversation has gone, ‘I don’t understand *Minecraft*, but I’m curious.’”

The Fusion’s current front office is located 25 miles from Blizzard Arena, in a beachside bungalow in Venice, Calif., whose previous tenant was Snapchat. It’s a cozy place with a well-cultivated sense of geek-chic whimsy. Roberts encourages the staff to wear slippers at work, a tradition he borrowed from South Korea, where e-sports are huge. He’s partial to a furry, Wookiee-like pair.

In the living room, Roberts shows a visitor a 3D-printed statue of himself shaking hands with Faker—the nom de game of Lee Sang-hyeok, a 23-year-old South Korean considered among the best *League of Legends* players in the world. The statue was a present from SK Telecom’s Park, after his company formed the partnership with Comcast. In exchange, Roberts gave Park a varsity jacket with the logo of T1 Entertainment & Sports, their new venture. “He outgifted me,” Roberts says with a smile.

Fusion athletes live across town in an Ikea-furnished eight-bedroom Tudor with a pool, a hot tub, and a treehouse. On a Monday evening in March, Roberts plops down on a sofa and joins a group of players watching Fusion University, the franchise’s minor league team, play on a widescreen TV. “Dude, we’re stomping it,” he says.

Roberts’s dudely demeanor helps him connect with players, including Neptuno (aka Alberto Gonzalez Molinillo). “At the beginning, I didn’t even know much about Comcast,” says Neptuno, who’s from Spain and at 27 is one of the oldest members of the Fusion. “I didn’t know who Tucker was. I thought he was just another member of the staff, and I really liked him. Someone told me, ‘No, that’s your boss.’”

The team lives with all the panache of a high school robotics squad; two Fusion athletes, in fact, share a bedroom. The players rise at about 11 a.m., or “gamer morning,” as they call it. Lunch is at noon, the first of two daily meals prepared by the team’s chef, Heidi Marsh, a Minnesotan whose repertoire includes Cuban sandwiches and pasta with clams. “Italian goes over really well with these guys,” she says. Lately,

Roberts leads a social strategy meeting in March at the Fusion's headquarters

Overwatch League Standings as of June 5

Team	Division	Wins	Losses	Where they play
Vancouver Titans*	Pacific	14	0	Burbank
New York Excelsior*	Atlantic	12	2	Burbank
San Francisco Shock	Pacific	11	3	Burbank
London Spitfire	Atlantic	9	5	Burbank
Los Angeles Gladiators	Pacific	9	5	Burbank
Dallas Fuel	Pacific	9	5	Burbank
	PLAYOFFS CUTOFF			
Philadelphia Fusion	Atlantic	8	6	Burbank
Hangzhou Spark	Pacific	8	6	Burbank
Seoul Dynasty	Pacific	7	7	Burbank
Atlanta Reign	Atlantic	7	7	Burbank
Toronto Defiant	Atlantic	7	7	Burbank
Boston Uprising	Atlantic	7	7	Burbank
Shanghai Dragons	Pacific	7	7	Burbank
Chengdu Hunters	Pacific	6	8	Burbank
Guangzhou Charge	Pacific	5	9	Burbank
Paris Eternal	Atlantic	5	9	Burbank
Los Angeles Valiant	Pacific	3	11	Burbank
Houston Outlaws	Atlantic	3	11	Burbank
Washington Justice	Atlantic	2	12	Burbank
Florida Mayhem	Atlantic	1	13	Burbank

*DIVISION LEADER. DATA: OVERWATCH LEAGUE

Roberts has been trying to get the team to eat Philadelphia cheesesteaks. The Europeans are ambivalent.

The players spend the rest of their day online scrimmaging against other *Overwatch* teams. They also study film, sitting with coaches and reviewing recordings of prior matches. The house has a gym, but gross motor exercise is optional.

As in pro baseball, skipping college and heading straight to the pros is the norm in e-sports—though with the recent proliferation of collegiate teams, some highly touted recruits are now choosing to spend a couple of years on a university campus perfecting their finger work against fellow student gamers. Elk (Elijah Gallagher, 19), the only American player on the Fusion, says his parents were disappointed when he chose to forgo a higher education. He's saving his salary to put toward college should his e-sports career peter out.

Injuries are more common than a nongamer might imagine. Neptuno began the season with bandages on his arm and is suffering from tendinitis and neck pain. Players use disposable hand-warming pouches to keep limber during matches. Websites list their gear, including the curvature and circumference of their preferred mouse.

In February the Fusion posted a video on YouTube in which Gritty visited the players' house, ate a trayful of subs, took a selfie, and, when leaving the bathroom, gave the universal sign for "It smells bad in here."

***Overwatch* isn't the only competitive e-sport. Teams have** also been formed to play *League of Legends*, *Counter-Strike*, *Fortnite*, and other games, potentially taking fans away from *Overwatch*. The game garnered tens of millions of regular players after its release in 2016, but it's since been in decline, on some days barely ranking in the top 10 of most-viewed games on Twitch, the service owned by Amazon.com Inc., where fans watch livestreams of people playing. Todd Juenger, an analyst with Bernstein Research, said in a recent report that he thinks Activision will move up the release date for *Overwatch 2*, by a year, to 2020, to try to generate renewed interest.

But recently, tickets to an *Overwatch* match were being offered at $10, compared with the usual $20. On a Friday night, the 528-seat theater was less than half full. "I am extremely skeptical that the current business model of e-sports can sustain the sort of hype that is going into it now," says Frank Fields, an industry consultant.

Roberts is undeterred. The recent deal with SK Telecom involves a half-dozen different games, an effort, he says, to "de-risk the portfolio" beyond *Overwatch*. "I think it could be bigger than some of the legacy sports," he says of Comcast's e-sports venture. "We don't have to compete in just one game. We're not just talking about, like, ice hockey, where it's only popular in kind of cold regions. Everybody plays video games in every single country, and so that's going to continue to be the glue that connects people."

Himself included. On Sunday mornings, Roberts wakes up and plays *Overwatch* with a group of childhood friends. "It's a way to keep in touch," he says. "We're really bad, but we have a lot of fun." Although right now Roberts reports to David Scott, Comcast Spectacor's CEO, there's a chance that someday he'll be asked to succeed his father, much as Brian took over from his dad 17 years ago. Roberts says he's daunted by the prospect. "People don't understand how hard my dad works," he says. Presumably, were he running a company with a market cap close to $190 billion, there wouldn't be a lot of time left over to quell robotic uprisings and perfect his tank skills.

Despite the recent murmurs of an e-sports bubble, Roberts sees an opportunity to reach a new generation of fans, particularly young men, who don't follow traditional sports or watch regularly scheduled TV. People such as Andres Villegas, a 34-year-old event planner in Los Angeles, who comes to *Overwatch* games dressed in sandals and armor to cheer for the Los Angeles Gladiators. *Overwatch*, he says, "gives us nerds something to root for." His favorite character is Mei, a Chinese climatologist-superhero who freezes enemies with an endothermic blaster. "If she were real, I'd marry her," he says. Ⓑ

The ~~Great~~ Ame
~~Good~~
~~Pretty Good~~
~~Decent~~
~~Not Terrible~~
~~Plausible~~
U.S.-Based

Larry Culp, GE's new CEO, inherited a mess. But he's the best hope to fix it. For now

By Bryan Gruley, Richard Clough, and Polly Mosendz

rican Company

One Sunday in March, Gary Wiesner, who runs General Electric Co.'s wind-turbine-blade factory in Pensacola, Fla., received something he'd never gotten before: a personal email from the CEO. H. Lawrence Culp Jr. wanted to know if it would be OK if he came for a visit.

When Culp arrived two days later, alone, in jeans, it marked the first time a GE chief executive officer had visited the plant since the company bought it 18 years ago. He spent about two hours walking the floor and chatting with technicians, stopping only briefly for a call with the board of directors.

A longtime devotee of Toyota-style lean manufacturing, Culp was in his element. While overhead screens flashed measurements of the production pace in eight-hour increments, Culp wondered aloud if the metrics were visual enough and whether they could be broken down into 20-minute or even 10-minute slices, so workers would know sooner when they might be falling behind on their goals. At the tour's end, he urged them to face up to production issues as early in the process as possible—or, as he put it, "Let's make it red, make it ugly, let's go fix them," Wiesner recalls. A half-hour after leaving, Culp sent another email promising to return.

The wind turbine business is among the least of Culp's worries. GE's balance sheet is lopsided with debt, its GE Power division is shedding millions of dollars in cash daily, the stock price is barely in double digits, and the Securities and Exchange Commission is investigating the company's accounting practices. Nonetheless, Culp's Pensacola visit is a telling example of how the first outsider to run GE is trying to fix it, metric by metric.

Since taking over as CEO on Oct. 1, he's eschewed the company's Boston headquarters for frequent travel, spending day-and-a-half sessions with GE units around the world and meeting with CEOs at Boeing, Duke Energy, and Safran, among other customers. In May, the night before his appointment to see FedEx Corp. CEO Fred Smith, he flew to Memphis to watch a million-odd packages handled in the "night sort" at the company's main shipping hub. Culp ordered almost 50 GE business heads to take off June 10-14 for an on-the-factory-floor, "true-lean" manufacturing boot camp that he's helping to teach.

None of this would surprise people who worked with Culp in his 14 years as CEO at Danaher Corp., the low-profile industrial conglomerate. On his watch, Danaher grew fivefold in revenue while Culp, in the mold of GE legend Jack Welch, oversaw scores of acquisitions. And like Welch, Culp isn't the sort to buy a company and forget it. It wasn't unusual to see Culp moving equipment around in factories or strolling trade shows seeking time with customers. While studying an orthodontics company Danaher had bought, Culp decided he could best understand its customers by testing the product himself. "Probably he didn't need braces, but he got braces," says Vicente Reynal, who ran that business for Culp.

Culp retired from Danaher four years ago at the age of 51. The behemoth he's charged with rescuing is, with $120 billion in annual revenue, six times the size of that company, with quadruple the number of employees. GE Power, which produces electricity-generating equipment, is by itself larger than Danaher. Whereas Culp expanded his former company with acquisitions, his first job at GE will be to shrink it. At Danaher he could mostly ignore an outside world that mostly ignored him—a luxury he no longer enjoys.

Culp is an "inspired choice," but the skills he honed at Danaher—buying companies and making them more efficient—don't prepare him for the mess at GE, concluded research firm Paragon Intel in a recent report. JPMorgan Chase & Co. analyst Stephen Tusa, who predicted GE's collapse before his peers, has argued that there still hasn't been a true accounting of the extent of the company's problems.

Culp's many acolytes aren't fazed. Jim Lico, who worked for him at Danaher and now runs Fortive Corp., a Danaher spinoff, says that when he heard of his old boss's new job, he bought a "meaningful" chunk of GE stock. "And I think most of the people that have worked for him did, too," Lico says. "When you look at how Danaher changed over the course of his CEO tenure, there might not have been as many zeros behind the numbers, but the work he did to build Danaher was every bit as risky" as what he confronts at GE.

Culp himself doesn't seem terribly worried, either. "Is it more challenging? I can't say that it is," he said in a brief phone interview in January, sounding supremely confident, or deeply delusional, or possibly both. "I wish I had more hours in the day, I wish we had started sooner, but I can't deal with any of that. We're just trying to make progress a little bit every day."

The magnitude of GE's fall probably helps Culp by giving him a longer leash with investors than his predecessors. Wall Street was always skeptical of Welch's successor, Jeffrey Immelt, who overpaid for some early acquisitions and later committed the cardinal sin of cutting the dividend. Then John Flannery was too busy dousing fires during his short reign to build rapport with shareholders. Culp brought his gleaming Danaher résumé and zero GE baggage. Although it's not at all clear that he can return GE to its past glory, he probably can't make things much worse. ▶

◀ GE shares got a nice little bump when the company announced on April 30 that it had burned only $1.2 billion in cash in the first quarter, a third of what most analysts expected. "No news is good news, I guess, in the eyes of some investors," Culp said in another brief phone chat. In fact, no news has been almost the only good news the past two years, as the rat-a-tat of negative revelations prompted investors to knock $150 billion off GE's value, or more than the entire market cap of Nike Inc. or General Motors Co.

The descent began decades ago. GE preserved its public bearing as one of the world's greatest companies partly because of its name: Everyone wanted to believe in General Electric, maker of lightbulbs and jet engines, corporate child of Thomas Edison, keystone of 20th century industrial America. Welch could do no wrong in the eyes of most investors and business media.


Culp

The reckoning also was deferred because GE's questionable accounting and selective disclosures made it almost impossible for shareholders to see which businesses were truly thriving and which weren't. The company pioneered the euphemistically named practice of earnings management; it could sell a handful of assets at the end of the quarter to give earnings a boost. GE routinely met or beat Wall Street expectations, which of course juiced shares. Further obscuring the picture, its in-house bank, GE Capital, was so vast that troubled businesses such as long-term-care insurance or subprime mortgages could fester without drawing much attention.

Cracks finally became visible under Immelt, who ran GE much like Welch, constantly buying and selling companies. When the 2008 financial crisis hit, GE almost collapsed. Immelt cut the dividend for the first time since the Great Depression. The SEC charged the company with misleading investors, saying it "bent the accounting rules beyond the breaking point." GE paid $50 million to settle the case without admitting fault, but it would no longer get a free pass when fiddling with earnings.

By the time Nelson Peltz's activist Trian Fund Management disclosed it had bought a $2.5 billion stake in 2015—usually not a good sign for top managers—Immelt had made two fateful decisions that would help pave the way for Culp's ascension. The first was GE's $10.6 billion acquisition of the energy business of France's Alstom SA. A maker of natural gas power turbines, Alstom had poor profitability as fossil fuels faced growing competition from renewables, but the purchase bolstered GE's position as the world's largest maker of gas turbines. The global market for those products was crashing when GE closed the Alstom deal in late 2015.

Then, in selling the bulk of GE Capital, Immelt cashed in on strong assets while hanging on to weak ones, such as the long-term-care insurance business that last year forced GE to set aside $15 billion to cover potential future losses. On the day in June 2017 that GE announced Immelt would retire, the stock rose 3.6%, its biggest one-day jump in almost two years.

GE veteran Flannery, one of four finalists inside the company to succeed Immelt, took over in August 2017. Two of the other candidates resigned before the year was over. "Things will not stay the same," Flannery vowed. He was right; things worsened as the power business continued to deteriorate and investors inured themselves to hearing one bad-news bombshell after another. Investor Trian, with its sizable GE stake and a board seat, grew concerned about both Flannery and the shallow bench behind him, says a source who isn't authorized to speak publicly.

Early last year, GE took the extraordinary step of overhauling its board, shrinking it to a dozen directors from 18. Flannery sought advice on new members from, among others, Kevin Sharer, a GE alumnus and former Amgen Inc. CEO, who was teaching at Harvard Business School. Sharer raved about his fellow HBS lecturer and golf-fishing-and--skiing buddy Culp. After Culp joined the board, he threw himself into learning everything about the giant company, even visiting factories. Analysts began to speculate that he'd soon become CEO. Sharer says there was no such plan, though Flannery "knew very well Larry's background and his capability." In one of Culp's first conversations with the then-CEO, Flannery said he admired what Culp had done at Danaher. Culp replied, "We were simply doing what we thought you were doing."

Unless you're a Danaher shareholder or a fan of Harvard case studies, you probably don't know much about the company. It's an oddly frequent focus of academic inquiry, perhaps because its executives seem more willing to speak with professors than the media, which Danaher tends to ignore. The company didn't respond to requests for interviews for this story.

Its headquarters are on the eighth floor of a glass building wedged between a federal credit union and an upscale restaurant in the Washington, D.C., neighborhood of Foggy Bottom. The name "Danaher" doesn't appear on the building's exterior. The company evolved from a real estate firm that brothers Mitchell and Steven Rales founded in 1969. (It's named for a tributary of a Montana river they liked.) By the mid-1980s, it had acquired hundreds of small and midsize industrial companies.

Danaher was one of the first U.S. companies to adopt Toyota Motor Corp.'s *kaizen* process of increasing productivity with tiny, continuous improvements. Its own version is called the Danaher Business System, or DBS, which in some ways resembles the Six Sigma quality-assurance regimen Welch embraced in the 1990s. DBS relies heavily on measurable facts, including not only profits and sales but

COURTESY GE

also nonfinancial metrics such as on-time delivery. These are measured on monthly, weekly, daily, and even hourly bases, depending on a project's urgency. From the moment Culp joined Danaher in 1990, he embraced it like a religion.

Danaher was Culp's first job out of HBS. Classmates sought out big-name companies, but Culp thought Danaher's relative obscurity would give him the chance to have a bigger impact quickly, he told students in a talk last year at Montgomery College in Maryland. One of his first assignments was helping assemble air conditioners at a plant in Japan—his introduction to lean thinking. In 2001, at age 38, he became CEO. Immelt succeeded Welch at GE the same year.

Over the next 14 years, Culp oversaw $25 billion in acquisitions. They included makers of digital microscopes, dental implants, water purifiers, and advanced packaging tools. Each year, Danaher performed due diligence on 150 companies or more while cultivating other targets that weren't for sale, at least not yet. It deliberately avoided cyclical businesses and those in the financial sector, Culp said in an HBS study.

Soon after a purchase, the acquired company would often be plunged into a DBS kaizen "event" that could last a few days. "Even the smallest operation was scrutinized, be it the act of picking up a tool, the organization of parts, or the distance a worker moved to get the product to the next stage of production," according to a study by the University of Virginia's Darden business school.

A month after Danaher bought Radiometer, a maker of blood analysis technology, in 2004, the top 40 managers of the acquired company split into six study groups to seek efficiencies. Radiometer's CEO told Harvard that he and his team were "skeptical that anybody… could make us any better." One Radiometer study group quickly learned that a part that took less than a half-hour to produce took as long as 18 days to ship. The group slashed that to less than two days by cutting two departments out of the production flow.

Radiometer executives then presented the new owners with their updated strategy, boasting of their 40% market share in key product segments. Danaher asked why 60% of the market preferred rival offerings. Radiometer's CEO told the Harvard researchers, "We probably knew our own existing customers very well, but we did not know our competitors' customers."

What other companies might see as success could be viewed with suspicion at Danaher. In 2007, Culp, a rabid Boston Red Sox fan, told this magazine, "There are a lot of companies where if you win 10-9, nobody wants to talk about the nine runs [they] just gave up." At Danaher, he said, "We'll talk about 'How did we give up nine runs? Why didn't we score 12?'"

Culp retired from Danaher in March 2015. "I was very happy with my post-CEO life," he recently told the *Harbus*, an HBS publication. In addition to teaching and advising Bain & Co., he did a lot of fishing and skiing. Money wasn't a problem; he'd made about $300 million at Danaher, according to a Bloomberg News analysis. "Some friends said, 'Why put your legacy at risk?' And I thought that is exactly why I should do it," Culp said. "I strongly believe GE as a company matters to the world."

In Culp's first day on the job, GE's stock shot up 7%. It soon reversed direction as the extent of the company's problems became clearer. By yearend, GE had cut its quarterly dividend to a penny—30¢ lower than its all-time high in early 2009—and the stock had fallen by almost 40%. In February, Culp's first letter to shareholders was a crisp five pages (vs. the 26 pages of Immelt's last such missive) that committed GE to a simple two-step strategy: reduce debt and fix the power business.

Culp moved as he might have at Danaher. He finalized an agreement to pay $1.5 billion to settle a Department of Justice investigation into GE's defunct subprime mortgage business. He scaled back Immelt's grandiose plan for the new headquarters in Boston. The smaller board now meets in a smaller room around a smaller table. He ditched a plan to spin off the thriving health-care unit in favor of selling its biopharmaceutical business for $21.4 billion to Danaher. He restructured a Flannery deal to sell GE's locomotive business in a way that will raise additional cash of as much as $3.4 billion.

GE also is getting a taste of Culp's zeal for that Danaher regimen. Inside the company, he has preached the importance of hewing to measurable results. On a conference call with analysts in January, he said, "When we talk about execution, we talk about daily management." He used the phrase "daily management" six times and the word "lean" 11 times in a recent presentation at an industry conference.

David Joyce, who heads GE's healthy aviation division, says this way of running things requires understanding not only what a business has accomplished but how. "I can sit down with Larry and show him 30 metrics and tell him relative to plan, the variance was positive in every one." But that's not enough. "Did you do it because there was a one-time event that allowed you to get across the finish line? Did you have a lot of variation and just happened to be on an upswing at the end of the quarter? How do you control it to make sure this performance repeats itself?"

A mountain of work remains. GE Power, in particular, shows how hard it will be for Culp to untangle the knots his predecessors tied. Angry shareholders have dragged it into court. Unfavorable contracts that past managers negotiated have helped Power become GE's biggest cash drain. The unit's marquee gas turbine suffered an embarrassing malfunction last year that necessitated widespread repairs. These would all be problems even if the gas-power market wasn't suffering as it is. GE Power lost more than $800 million last year. At $27 billion in revenue, it's one of GE's biggest businesses, yet investors value it at zero—or worse. Culp has acknowledged that a turnaround will take years.

If he can restore GE to its old self, he could go down as one of the greatest CEOs ever, surpassing even Welch at his cult-status peak. Culp also could collect a windfall of more than $200 million if GE's stock goes way up and stays there. He says he's eager to get back to what he did so well at his old job: buying good companies and making them great. For now, though, he's stuck trying to make GE merely good again. —*With Anders Melin*

Stills from Bárbara Wagner and Benjamin de Burca's *Swinguerra* (2019) in the Brazilian pavilion at the Venice Biennale

ON THE GLOBAL STAGE ...

... ART STRIKES A PATRIOTIC POSE

With nationalists rising around the world, artists at this year's Venice Biennale ask, What is a nation, anyway?
By James Tarmy

June 17, 2019

Edited by Chris Rovzar

Businessweek.com

In this year's Brazilian pavilion at the Venice Biennale, the artists Bárbara Wagner and Benjamin de Burca have created a 20-minute video celebrating *swingueira*, a wildly popular dance movement from the country's northeast. Triumphant electronic music thumps insistently while projectors show teams of mostly black, gender-nonbinary dancers in elaborate choreographed routines they organized themselves. People in revealing outfits stare calmly into the camera as they jump and lunge in a vivid demonstration of their autonomy and power.

In one performance, a woman leads a troupe as they bounce across what appears to be a beach. In another, a group salutes in front of a massive Brazilian flag.


Angelica Mesiti's *Assembly*, inside the Australian pavilion

"This is a very deep and very empathic vision of Brazil," says the show's curator, Gabriel Pérez-Barreiro. "Brazil always suffers from its image abroad. What do people think they know, and what do they not know?"

Brazil is one of dozens of countries at this year's biennale that have become tangibly nationalistic, displaying a cultural pride or patriotism not seen in decades.

The Venice Biennale was founded in 1895 as a sort of World's Fair for art, but it wasn't until 1907 that Belgium built the first of the show's permanent national pavilions. Set in the Giardini, a wooded park on the southeastern edge of the city, the pavilion was a large art nouveau exhibition space in the rough dimensions of a big suburban home.

Soon after, more countries built structures, including Britain (which converted an existing cafe in the Giardini in 1909), Germany (also 1909), France (1912), Russia (1914), and the U.S. (1930). Hungary's, erected in 1909 as well, is covered in brilliant mosaics. Austria's, built in 1934, was designed by Josef Hoffmann and resembles a light-filled Bauhaus-style factory.

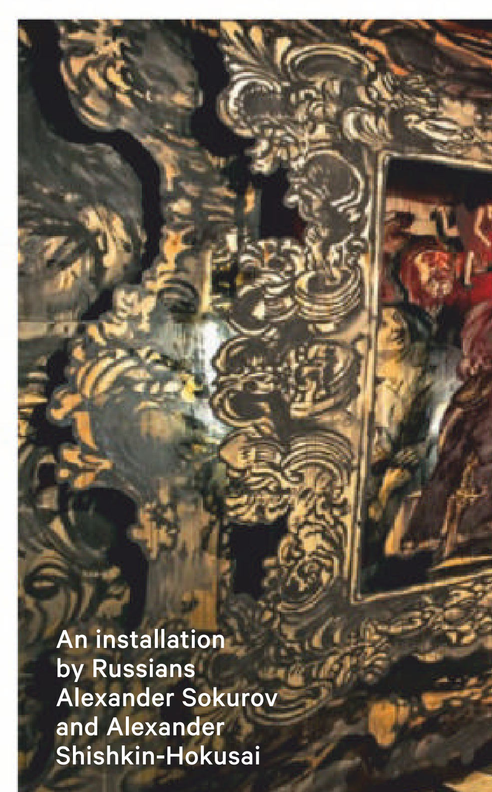
Each pavilion's management is slightly different—technically, the U.S. pavilion is owned by the Solomon R. Guggenheim Foundation, for instance, but its programming is determined by the United States Information Agency, the U.S. Department of State, and the Fund for Artists at International Festivals and Exhibitions. There are now 30 permanent pavilions in the Giardini and roughly an additional 60 national participations, which are either in the nearby Arsenale, a former shipbuilding factory, or in temporary locations around the city.

The format, content, and presentation of these exhibitions evolved over time, but for most of the biennale's history, each country's program was intended to project cultural and political relevance to an international audience. "Contemporary notions of nationhood have been bound up with the biennale since its inception," says art historian Claire Brandon.

This idea became particularly pronounced after World War II, as the U.S. touted Jackson Pollock, Willem de Kooning, and other painters as proof of the artistic independence possible under a "free" society. "In the 1950s, the United States was very interested in exporting abstract expressionism outside the U.S. as a distinctly American enterprise," Brandon says. "The biennale was one of the platforms where that brand of abstract expressionism was marketed."

But in the 1990s, as the Cold War faded and globalism became an international fixation, the six-month-long event slowly transitioned into something more cerebral and artist-focused, turning into a showcase for cutting-edge, often deeply experimental contemporary art. This art can sometimes seem silly—in 2011, for example, the U.S. pavilion featured an installation by the artists Jennifer Allora and Guillermo Calzadilla, in which competitive athletes took turns running on a treadmill that was mounted on an overturned 60-ton British tank. But it's also considered one of the world's most important forums for new and established artists. "The trajectory I've known from the 1970s up to the present is that the artist comes before the country," says Paul Schimmel, an independent curator and former chief curator of Museum of Contemporary Art (MOCA) Los Angeles.

By 2013 art at the biennale might have aspired to be political, but a nation's politics had nothing to do with the art in the national pavilions. That year, France and Germany hosted each other's exhibitions, with the latter putting on a show of four non-German artists who "establish[ed] a kind of universal visual language," as the pavilion's curator, Susanne Gaensheimer, said at the time. Nationality of any kind was relegated to the dustbin, a relic of a preglobalized, unenlightened world.


An installation by Russians Alexander Sokurov and Alexander Shishkin-Hokusai

But with the recent ascendancy of Viktor Orban, Marine Le Pen, Donald Trump, Jair Bolsonaro, and their attendant

OPENING SPREAD: COURTESY BÁRBARA WAGNER & BENJAMIN DE BURCA/FUNDAÇÃO BIENAL DE SÃO PAULO

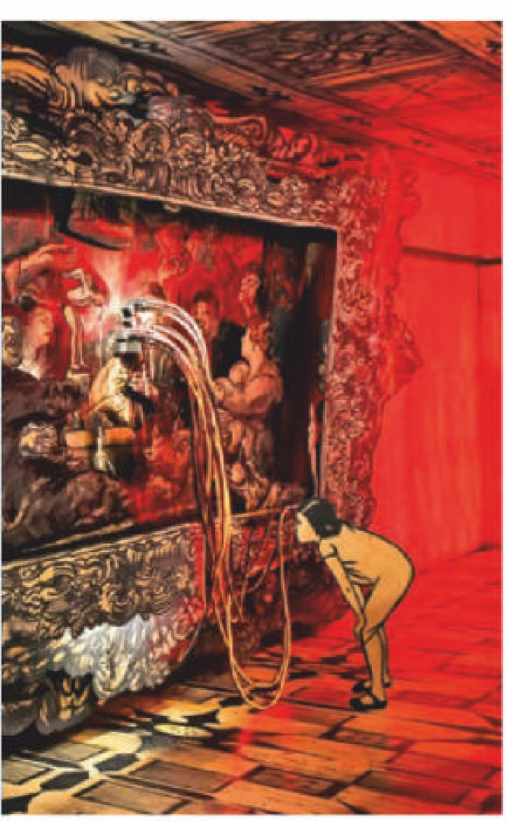
Belgians Jos de Gruyter and Harald Thys created *Mondo Cane*, a "folkloric museum"

populist movements in Europe, the U.S., and South America, something changed at this year's biennale. (It runs from May 11 through Nov. 24.)

At the Australian pavilion, artist Angelica Mesiti made a video installation "that depicts the many faces of modern Australia." The Korean pavilion features three domestic artists in a show dedicated to questioning the country's "modernization that has been in pursuit of Western modernity." Canada's pavilion features work by an Inuit artist collective that has documented, and in some cases re-created, Inuit culture in multiple films and installations.

The Belgian pavilion's exhibition waxes nostalgic (and weird) for a time gone by. It's filled with 20 old-fashioned, almost life-size dolls, including a potter, a knife grinder, and, in side rooms, "zombies, poets, psychotics."

The Hungarian pavilion



CLOCKWISE FROM LEFT: JOSH RAYMOND. COURTESY LA BIENNALE DI VENEZIA. ALAMY. COURTESY LA BIENNALE DI VENEZIA

These pavilions, along with more than a dozen others, have made a hard pivot from the intellectualized art theory of years past. "I think what's happening in the broader political world is affecting artists," Schimmel says. You could interpret the result as nationalist, he continues, "but I see it almost as being provincial in an isolationist way."

"Politically now, we live in terrible turmoil," says Mikhail Piotrovsky, the general director of the State Hermitage Museum in St. Petersburg, who curated a series of installations at the Russian pavilion. "Culture matters," he says. "We had a lot of bridges between nations, but now most of those bridges are blown up. Our stance is to be a bridge over troubled waters."

His exhibition centers around a Rembrandt masterpiece, *Return of the Prodigal Son*, a treasure that's owned by the Hermitage but is also part of the Dutch artistic heritage. It's meant to be a vehicle for international exchange. "In general, you have people showing [their] national identities as a basis for dialogue, because we need dialogue," Piotrovsky continues. "We're on the brink of war and in the middle of wars of culture and memory."

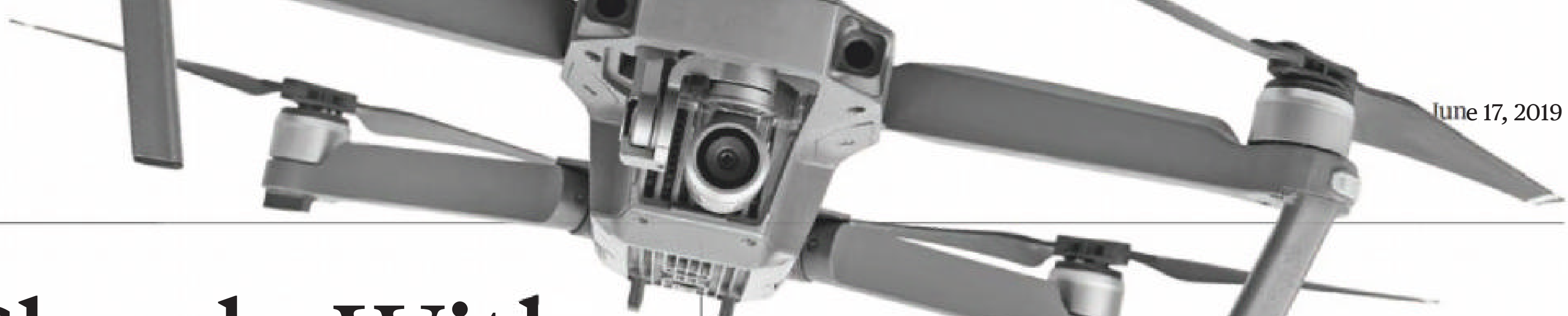
Not everyone is a fan of this development. "It's state-inspired, do-gooder art," says Schimmel, the former MOCA curator, who visited during the biennale's opening. "The national pavilions seemed hokey."

Back at the Brazilian pavilion, curator Pérez-Barreiro says he planned his show before the election of Bolsonaro, a far-right politician known for his anti-gay, anti-conservation, anti-human-rights policies. "I'm keen for people not to think that this is a reactive project," he says.

Nevertheless, the exhibition has become an inadvertent repudiation of Brazil's current administration. "It's a self-proclaimed, proud, confident vision of a completely different Brazil than what's being pushed by the government right now," Pérez-Barreiro says.

That might be the distinction between the Venice Biennale of the 20th century and the biennale of today. Whereas midcentury exhibitions might have proclaimed the particular values of nationhood the governments wanted to see—America's abstract expressionism as a radical statement of self-expression, Russia's socialist realism as an assertion of the country's proletarian pull—many of the artists in this year's pavilions are carving out ideas of patriotism and nationalism that are often at odds with the ruling structures of the countries they're ostensibly there to promote.

"It's the zeitgeist," Pérez-Barreiro says. "Artists are looking to push back against these very simplified ideas of what a nation is." Ⓑ



Cloudy With A Chance Of Big Macs

The first drone food delivery is on track for this summer

By Kate Krader

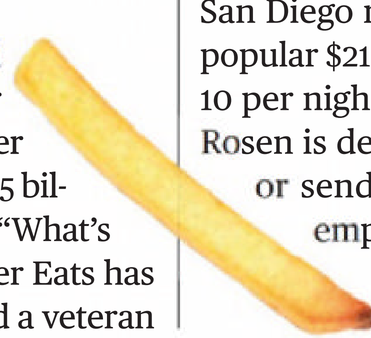
On an overcast Monday in May, I joined a group in a parking lot behind a San Diego McDonald's to witness the future of food delivery. In the center of a large area cordoned off with yellow crime-scene tape sat a 4-foot-long, six-armed AR200 drone with a custom-designed payload box.

I'd come to watch Uber Elevate, the aerial arm of the $72 billion ride-sharing service, test food delivery by drone. The original plan was to observe the dramatic transport of a Big Mac, chicken McNuggets, and two orders of fries a half-mile away to the entrance of the Viejas Arena at San Diego State University. But with the wind clocking in at 26 knots—classified as a "strong breeze" on the Beaufort scale—that trip was canceled. The burger-bearing drone instead rose 25 feet in the air, hovered for about 60 seconds, then slowly descended.

It was an inauspicious debut for one of Uber Elevate's key new programs. Google already has approval from the Federal Aviation Administration to make unmanned commercial deliveries as part of its Wing program in Blacksburg, Va. This month, Amazon.com Inc. unveiled a revolutionary drone it hopes will deliver household goods.

But the team behind Uber Elevate—which is still waiting on FAA approval—believes the service is the future of food delivery. The company anticipates its commercial business will begin later this summer in San Diego and plans to set pricing for drone delivery then.

Parent company Uber Technologies Inc. has had a turbulent year, losing $1 billion in the first quarter after its widely hyped initial public offering. But Uber Eats has been a bright spot, reporting revenue of $1.5 billion in 2018, almost 150% higher than a year earlier. "What's convinced me on drone delivery is to see how Uber Eats has grown," says Eric Allison, head of Uber Elevate and a veteran of Larry Page's flying car company Zee.Aero. "Our customers want selection, quality, and efficiency—all areas that improve with drone delivery."



Over the next four years, the food-delivery business is estimated to increase 12% a year, to $76 billion in 2022, says investment firm Cowen Inc. Uber isn't disclosing the cost of drone testing, but according to filings in advance of its IPO, Uber Advanced Technologies Group, which includes Uber Elevate and the company's self-driving car unit, spent about $457 million on research and development in 2018.

San Diego is a hotbed of drone research. That's due in part to its military presence but also because—the May test notwithstanding—the weather is reliably sunny and calm. In 2018 the FAA selected San Diego as one of 10 locations to test commercial drones.

Uber Elevate has no immediate plans to send drones to your home. Instead, they'll fly to designated safe landing zones where waiting couriers will pick up deliveries to bring to your door. Another option is to land on the roof of a parked Uber car, which will carry the food the last leg to its destination. Safety issues are a sticking point: A midair collision could send the devices—and their burgers—onto unsuspecting pedestrians below. Noise pollution from whirring rotors is another concern.

Kate Fraser, head of aviation policy at Uber Elevate, believes it will take at least three years to broadly implement the service in major cities, but the company is betting customers will come around to the convenience. For a delivery 1.5 miles away, ground transportation averages 21 minutes; drones can make the trip in about 7 minutes. The company is also bullish on vertical takeoff and landing vehicles for people and predicts you'll be tapping an Uber Air button on your smartphone by 2023.

For most of the process, Uber has been working with McDonald's. Along with testing flight paths, the team has spent months designing packages that keep burgers intact, french fries hot, and ice cream cold.

A partner was added to the pilot program in May, when San Diego restaurant Juniper & Ivy signed on to deliver its popular $21 off-the-menu double-patty burger. (It makes only 10 per night and doesn't currently deliver.) Owner Michael Rosen is debating whether he'll use the restaurant kitchen or send a cook off-site to prepare them. "To send an employee off-site would be a money loser for us," he concedes. "But to team up with Uber is publicity we will pay for." Ⓑ

ALAMY (2), GETTY IMAGES

A Spot in The Dark

When it comes to home décor, a pendant does more than illuminate—it shapes the space over our heads. When choosing one, here are four rules to keep in mind

By Ami Kealoha
Photograph by Hannah Whitaker

Light Placement

For spaces requiring focused illumination—a counter or table—try a directional pendant. The cone-shaped **Foscarini Aplomb** ($696) is made with specially formulated concrete, so it's great outdoors. Italian designers Paolo Lucidi and Luca Pevere recommend it for "pergolas, verandas, or structures covered with vines." If you bring the organic shape indoors, the room will need other lighting to diffuse harsh shadows and brighten dark corners.

Long-Term Appeal

Pendants can be worthy investments, so look for quality construction and standout design. The alabaster disc on the **Apparatus Median Mono** ($3,200) offsets a fluted brass lozenge to produce a warm glow that amplifies wood, bronze, or other natural materials that age. Hang in a group above a table for dramatic effect, or pair them over nightstands.

Versatility

One good option in almost any uncluttered, contemporary space is the **Smile 01** ($124) by newly formed lighting company Beem. Designer Samuel Wilkinson, known for his award-winning Plume light, here uses soft-filament LEDs that evenly light a U-shaped borosilicate bulb that's screwed into a ceramic fixture. With its diminutive size, only about 4 inches by 4 inches, it works well grouped in a row of three over a console or island.

Brightness

To avoid the flat, unflattering effect typical of overhead illumination, use low wattages. Combine the soft light with other sources at different heights to provide an adequate glow. Zesty Meyers, co-founder of design gallery R & Co., recommends buyers think about "how the pendant can both stand out and complement an interior." Anthony Barzilay Freund, editorial director of online auction house 1stdibs, says to consider the scale of the fixture, ceiling height, and—don't forget—the height of the tallest person in the home.

Laces Out

Velcro, made classic in 1980s kidswear, further secures its place in these summer shoe staples

By Jason Sheeler

Photograph by Meredith Jenks

1. ERMENEGILDO ZEGNA COUTURE TRIPLE STITCH
Designer Alessandro Sartori is old enough to remember KangaRoos—the ’80s kicks with Velcro pockets. Here he accentuates the straps with crisscrossed hashes and upgrades the shoe’s lining with vicuña wool. Velcro comes on the high-top and low-top versions of his men’s sneaker; think of the latter as a luxurious take on the Adidas Stan Smith but with a narrower toecap and a thicker, slightly graded sole. *$695*

2. PRADA CLOUDBUST ALLACCIATE
Tech fabrics have long been a hallmark at Prada. Here, Miuccia Prada updates her scuba-inspired Cloudbust women’s sneaker with a leather-and-mesh upper with a narrow, slightly dainty single Velcro strap over the top. *$750*

3. NIKE + FEAR OF GOD AIR 1 MOCCASIN
Jerry Lorenzo, founder of streetwear label Fear of God and hardcore sneaker collector, is now a reliable Nike collaborator. His latest men’s shoe is based on Nike’s beloved Air Raid high-top, which featured crossed straps over the bridge. Here the shoe is rendered in ripstop nylon with a wide flap of Velcro. *$170*

4. KENZO SONIC VELCRO
For this women’s sneaker, Kenzo creative director Humberto Leon, co-founder of fashion brand Opening Ceremony, combines neoprene, mesh, rubber, and three kinds of leather, all held together by an X of Velcro straps. *$430*

PROP STYLIST: KALEN KAMINSKI

DID YOU KNOW?
"Velcro" is a French portmanteau of *velours* (velvet) and *crochet* (hook). It was invented in the 1940s by using tiny hooks and furry loops that stick together until opened with a signature *krrrtchchchch!*

5. MARNI TOUCH STRAP
Francesco Risso took over Marni three years ago, bringing "it" sneaker experience he earned at Prada. He's doubled down on technical fabrics and molded upper constructions on his new men's sneaker, using neoprene and suede, plus a gum rubber sole, for a moonbootlike look. A Velcro strap sits high on the foot to cinch it all in. *$610*

6. STELLA MCCARTNEY ECLYPSE
The British designer in 2017 introduced this genre-bending women's sneaker, which uses vegan leathers and rubber made from renewable resources. This summer she updates the shoe—endorsed by stylistic opposites Kate Moss and Taylor Swift—with a pair of wide Velcro straps and a thick tab on the back to help wedge your foot in. *$685*

7. NIKE AIR HUARACHE CITY LOW
The original Huaraches made their debut in 1991, combining the sensibility of South American sandals and the snug fit of water ski boots. This new women's version is a running shoe-bootie hybrid made from a single piece of neoprene. Now it's fully customizable with adjustable straps, removable laces, and a one-tab Velcro closure at the back. Perfect for the treadmill or the sidewalk. *$130*

8. TEVA HURRICANE
Teva sandals were invented by a Grand Canyon river guide who rigged Velcro straps to a pair of flip-flops. To celebrate the 100th anniversary of the canyon's designation as a national park, the brand went back to its roots and released the Hurricane, which furthers Teva's legacy of hybridization. It looks like a sock but feels like a sneaker: The knit upper is kitted out with Velcro straps, and a buckle sits on a river-rock-ready sole. *$120*

Keep Your Options Open

The BMW M850i convertible offers juicy upgrades to a model that's already pretty near perfect. *By Hannah Elliott*

In an April online review, I called the 2019 BMW M850i a "unicorn." In my test of the hardtop coupe, which marks a resurrection of the defunct-since-the-'90s line of 8 Series BMWs, I found a handsome chariot that checked a lot of boxes. It's zippy, sprinting to 60 mph in 3.8 seconds and hitting a top speed of 155. Plus, it sports an excellent infotainment system and a blissful amount of storage. It's comparable to the beefy Bentley Continental GT but about $100,000 less expensive. The review caught fire on our website, probably because summer was nearing and people were dreaming about driving for fun. It got me thinking, What's even more fun than a unicorn?

Here's what: A unicorn with a retractable soft top.

The $121,400 BMW M850i convertible is just as perfectly balanced and aggressively tuned as its roofed counterpart and, with the top down, nicer to look at. At its base price, it'll cost you $9,500 more, plus desirable options such as the neck warming fans and heated armrests that are part of the $1,300 comfort seating package. Active antiroll bars that pop out in the case of a collision are—blessedly—standard. BMW has come a long way in making safety a given, not a splurge.

One standard item I wish were optional is the "Display" key, a palm-size touchscreen obelisk used to start the car but also to view the status of things like windows and locks, set a time to turn on the heater, or check the tire pressure. It feels like a second phone—and costs $606 to replace if (when) you lose it.

The convertible weighs 258 pounds more than the coupe—but you won't notice. Instead, you'll pick up on the stiffness of the reinforced body, especially in sport mode. You'll also note a thrilling squirreliness to the all-wheel-drive as you peel out.

In any convertible you hear the engine notes well enough, but here they demand attention. It seemed everyone swiveled as I powered home from work through Manhattan. The engine roars loudest as you downshift, gurgling and popping. Have you seen those YouTube videos of dogs whining and "talking"? It's like that but even more sinister.

Inside the welcoming cabin, the M850i convertible is supportive in all the right places, with merino leather seats that embrace you. The cockpit integrates an excellent 10.25-inch central display and intuitive 12.3-inch instrument cluster, plus a high-resolution heads-up display and BMW's next-generation iDrive software. I loved the ambient lighting that softly changes from blue to yellow as you drive at night. Speaking of which, excellent night vision is an optional upgrade.

The 12-speaker Harman Kardon audio system comes standard with a powerful 464-watt amplifier, though even that has trouble competing with the engine roar when the top's down.

More controversial will be the optional $650 Swarovski crystal accents, including a diamond-cut knob for the shifter. I consider the latter a well-executed extravagance, though my followers on social media called it ostentatious. "Crystal is for grandma's cabinet," was one comment on my Instagram feed. Another: "I wish it was connected to a manual transmission."

Alas, there's no stick option to pair with the twin-turbo 523-horsepower V-8. But it has an eight-speed automatic transmission, adaptive suspension, roll stabilization, and active steering. You'll slip through traffic like water over stones.

The soft top retracts in 15 seconds at speeds of up to 30 mph. You won't ever want to put it back up. B

CESAR SOTO/BLOOMBERG

’Round Midnight

Audemars Piguet’s new Code 11.59 chronograph pays homage in its name to the last minute of the day

Photograph by Robin Stein

Most luxury watch brands have certain signatures, like the Omega Speedmaster or Rolex Submariner, that serve as aesthetic entry points for collectors. The icon from Audemars Piguet is the octagonal Royal Oak, designed by Gérald Genta and introduced in 1972 as a defiant riposte to a swelling tide of quartz watches. Hoping lightning strikes twice, the brand’s Chief Executive Officer François-Henry Bennahmias led half a decade’s development on Code 11.59, a range of timepieces named after the minute before the clock strikes 12.

THE COMPETITION

• Also making a splash this year is IWC Schaffhausen’s Spitfire collection, the backbone of which is the $6,250 Pilot’s Watch Chronograph in bronze.

• Breitling’s new Navitimer Ref. 806 1959 Re-Edition has a vintage feel, with a beaded bezel and small second, 30-minute, and 12-hour counters crammed within a busy tachymeter. In steel, it runs $8,600.

• If you’re looking for something wilder, Montblanc’s Heritage Spirit Pulsograph ($31,800) has a salmon dial and a monopusher movement by Swiss manufacturer Minerva.

THE CASE

The 11.59’s broad dials end at a sliver of bezel, and cases come in a range of precious metals. (This one is rose gold.) The crystal is curved two ways, making for excellent legibility on its face and a distinctive hall-of-mirrors effect at an angle. All the collection’s watches are a gender-neutral 41mm, and for the chronograph, the brand made its first in-house integrated self-winding flyback movement. The Code 11.59 siblings will be central to the AP family for years to come, so a piece from the debut year will be an undisputed collector’s item. *$42,400; audemarspiguet.com*

PROP STYLIST: MARGARET MACMILLAN JONES

Hong Kong Nips at New York, Thanks to Alibaba

By Nisha Gopalan

ILLUSTRATION BY GEORGE WYLESOL

Alibaba's $25 billion debut on the New York Stock Exchange in 2014 was, at the time, the largest-ever initial public offering in the U.S. With the company said to be planning to raise $20 billion from a secondary stock offering in Hong Kong, the operators of America's top exchanges should be worried that business from China will start to dry up.

Alibaba Group Holding Ltd. isn't deserting New York, which will remain its primary listing. But it plans to add one in Hong Kong, people familiar with the matter say, signaling to other Chinese companies that they have IPO options closer to home. (Alibaba hasn't said whether it plans a Hong Kong listing.)

Businesses without a three-year track record of profitability are still prohibited from listing on Chinese exchanges. But a soon-to-be-launched Shanghai market will allow money-losing tech plays to be listed, and in April 2018, Hong Kong changed its regulations to allow unprofitable tech companies to list in the city. It also scrapped a strict one-share-one-vote rule for tech stocks, leading to mega-IPOs by Chinese smartphone operator Xiaomi Corp., which raised $5.4 billion in July, and food-delivery giant Meituan Dianping, which raised $4.2 billion ahead of its September debut. The issues helped make Hong Kong the world's top IPO venue last year.

Beijing has never been happy that Alibaba, China's most valuable company, is publicly traded in the U.S., and Alibaba isn't the only Chinese company wanting to reduce its exposure to U.S. investment: Semiconductor Manufacturing International Corp., a big chipmaker, said at the end of May that it planned to delist in New York because of its paltry trading volume there—the stock is also listed in Hong Kong—but with trade tensions mounting between China and the U.S., the timing hardly seems coincidental. Earlier in May, DouYu International Holdings Ltd., a Chinese video game live-streaming platform, delayed its U.S. IPO. Even before the trade war heated up, Chinese companies were being blocked from expanding in the U.S. Alibaba's attempt to buy MoneyGram was halted on national security grounds in early 2018; in April, the Committee on Foreign Investment in the U.S. ordered the dating app Grindr's Chinese owners to sell the company by 2020.

That's not to say that the U.S. will see a precipitous drop in Chinese listings anytime soon. No country has deeper capital markets than the U.S., or a larger base of analysts who understand tech stocks. But New York and Nasdaq should be worried. There are 173 Chinese companies worth $758 billion with primary listings in the U.S., according to Bloomberg data. Hong Kong regulations say that if more than 55% of the trading of a China-based company's stock is in the city, then it becomes a dual-primary listing rather than a secondary one. With Hong Kong readily accessible to Chinese investors, it's fairly likely Alibaba will hit that mark. At that point, would a presence on the New York exchange be more trouble than it's worth? B

—Gopalan is a finance columnist for Bloomberg Opinion

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