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Bloomberg Businessweek

WHY ISIS HAS ALL THE MONEY IT NEEDS

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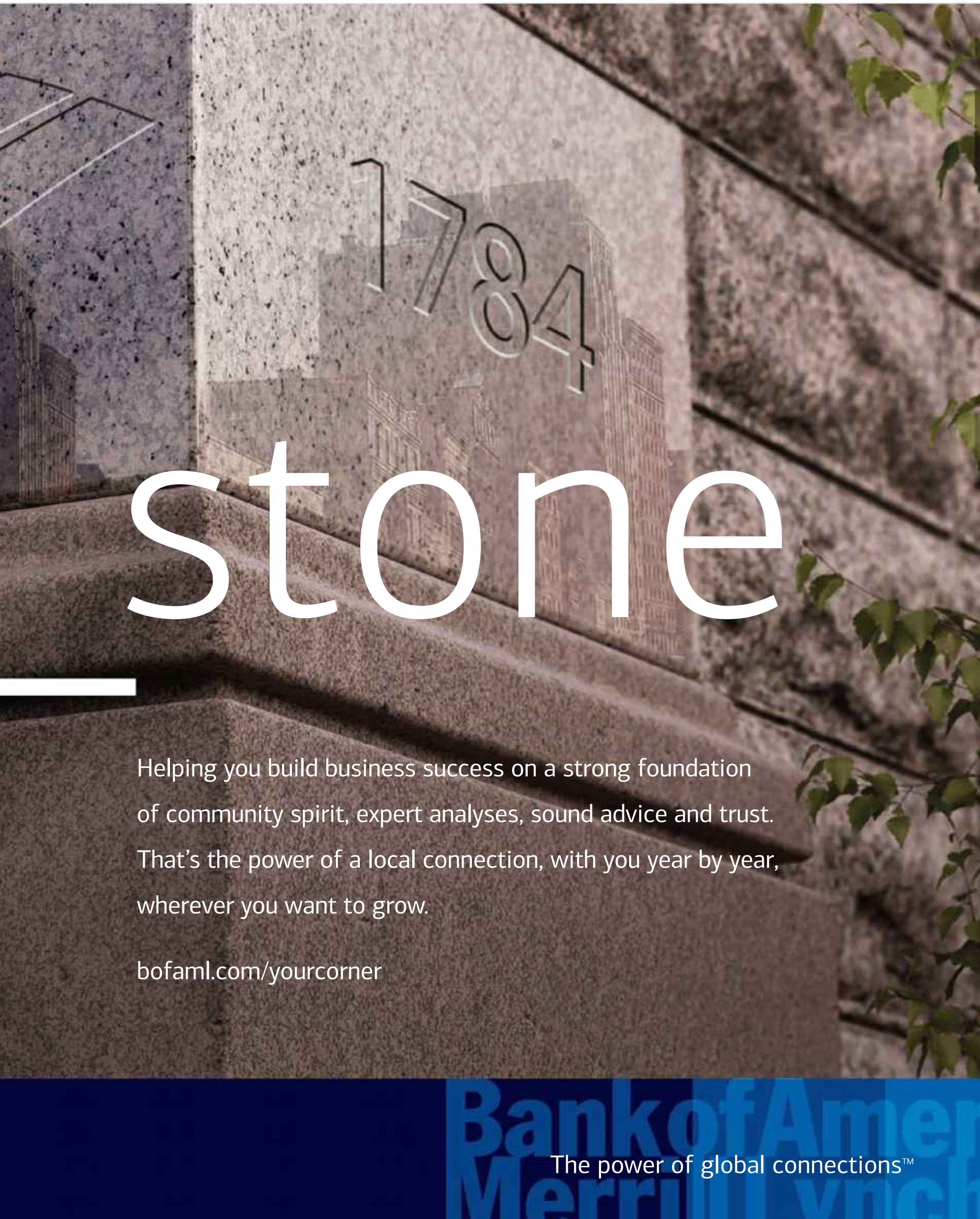
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Bloomberg Businessweek
November 23 — November 29, 2015

Cover Trail

How the cover gets made

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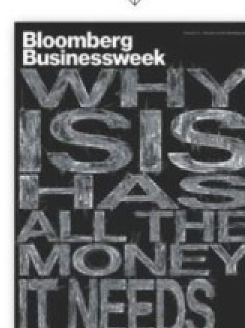
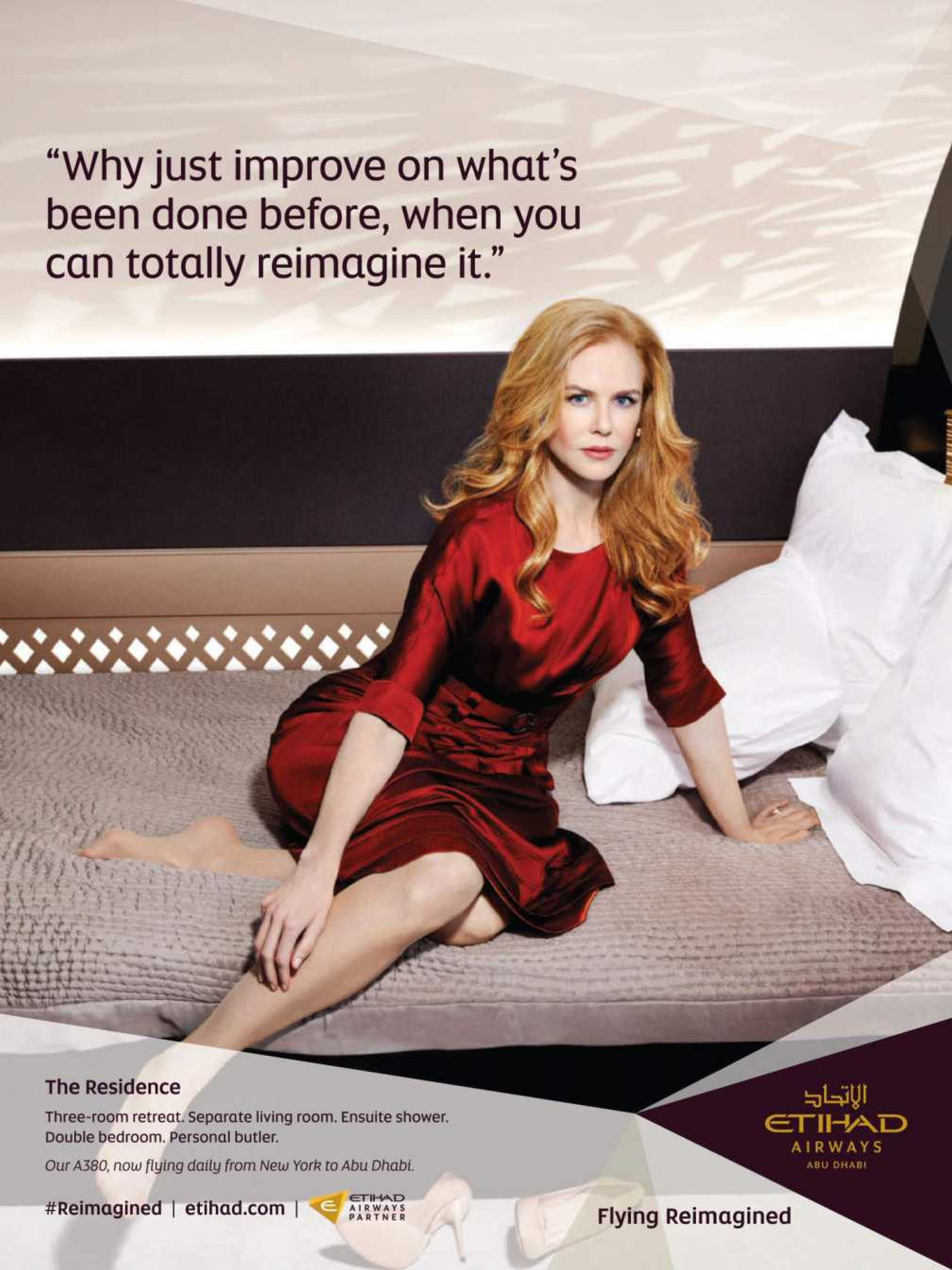
"The cover story is on how ISIS is so well-funded."

"How is it so well-funded?"

"Mainly through oil, but the U.S. government has underestimated exactly how much profit that generates. It also creates revenue from more unexpected sources, like agriculture and antiques."

"This seems like a cover that doesn't need much art to make its point."

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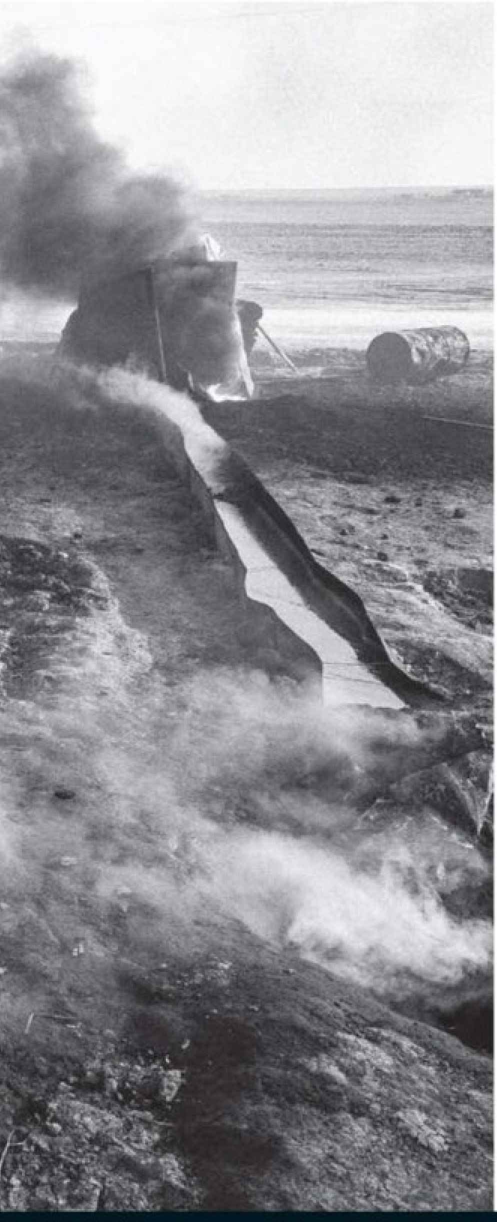
Corrections & Clarifications
In the 50 Companies to Watch section of "The Year Ahead 2016" (Nov. 9, 2015-Jan. 5, 2016), the entry on Maxwell Technologies stated that Ford Motor is one of the vehicle makers embracing Maxwell's ultracapacitor technology. It isn't; General Motors is. Ⓑ "Lunch Is a Tasty Perk in Shenzhen's Factories" (Companies/Industries, Nov. 16-Nov. 22, 2015) omitted Sheila Wong from the list of Nourish's investors, and misidentified Katherine Tsang as an investor.

FARM: PHOTOGRAPH BY RYAN LOWRY FOR BLOOMBERG BUSINESSWEEK; DANIELS: LOU ROCCO/ABC/GETTY IMAGES

It's More Than Just Oil

So far, U.S. efforts to cut off Islamic State's funds have failed. Here's why
By Cam Simpson and Matthew Philips



Weeks before the attacks that killed 129 people in Paris, U.S. warplanes resumed sorties above Syria and Iraq, targeting anew oil fields and other parts of a vast petroleum infrastructure that fuels—and funds—Islamic State, one of the richest terrorist armies the world has known.

These airstrikes were launched not because U.S. officials were prescient. They came after the Obama administration found and quietly fixed a colossal miscalculation. U.S. intelligence had grossly overestimated the damage they'd inflicted during airstrikes on the militants' oil production apparatus last year, while underestimating Islamic State's oil revenue by $400 million. According to U.S. Department of the Treasury officials and data they released in the wake of the Paris mayhem, the terrorist group is actually taking in $500 million from oil a year. What's more, just a few hours before the first Islamic State suicide bomber blew himself up outside Stade de France stadium on Nov. 13, U.S. Army Colonel Steve Warren conceded at a press briefing that some American airstrikes disrupted IS oil operations for no more than a day or two.

The Obama administration "misunderstood the [oil] problem at first, and then they wildly overestimated the impact of what they did," says Benjamin Bahney, an international policy analyst at the Rand Corp., a U.S. Department of Defense-funded think tank, where he helped lead a 2010 study on Islamic State's finances and back-office operations based on captured ledgers. He says the radical revision on oil revenue came after Treasury officials gained new intelligence on Islamic State's petroleum operations—similar to the ledgers Rand used for its study—following a rare ground assault by American Special Operations Forces this May. U.S. forces, operating deep into the group's territory in eastern Syria, targeted and killed an Islamic State "oil emir," a man known by the Arabic nom de guerre Abu Sayyaf, Pentagon officials said at the time. (Treasury officials, who are charged with leading the administration's war on Islamic State's finances, declined to comment specifically on whether Abu Sayyaf's ledgers were at the root of their new estimates, but the agency has said the figures are extrapolated from the militant group's oil earnings from a single region in a single month earlier this year.)

It's not clear how the U.S. got it so wrong, Bahney says, but he suspects that the latest round of airstrikes are directly related to the administration's new math. "You have to go after the oil, and you have

The terrorist army has diverse nonoil assets—ranging from hostages to fertile farms—and a sizable cash surplus

to do it in a serious way, and we've just begun to do that now," he says. Yet even if the U.S. finally weakens the group's oil income, Bahney and other analysts in the U.S., the Middle East, and Europe contend, Islamic State has resources beyond crude—from selling sex slaves to ransoming hostages to plundering stolen farmland—that can likely keep it fighting for years. In any case, $500 million buys a lot of $500 black-market AK-47s.

Islamic State got into the oil business long before it captured global attention through barbaric beheading videos in the summer of 2014. It seized Syrian border crossings to profit from oil smuggling. And it tapped a network that's operated for decades, dating to at least the 1990s, when Saddam Hussein evaded sanctions by smuggling billions of dollars worth of oil out of Iraq under the United Nations' Oil-for-Food program.

Most often refined in Syria, the group's oil is trucked to cities such as Mosul to provide people living under its black banner with fuel for generators and other basic needs. It's also used to power the war machine. "They have quite an organized supply chain running fuel into Iraq and [throughout] the 'caliphate,'" says Michael Knights, an Iraq expert at the Washington Institute for Near East Policy, using the militant group's religiously loaded term for itself. Because the U.S. apparently believed the real money for Islamic State came primarily via selling refined oil, rather than crude, last year's strikes heavily targeted refineries and storage depots, says Bahney. He and other experts say that strategy missed an important shift: Militants increasingly sell raw crude to truckers and middlemen, rather than refining it themselves. So while Islamic State probably maintains some refining capacity, the majority of the oil in IS territory is refined by locals who operate thousands of rudimentary, roadside furnaces that dot the Syrian desert.

Pentagon officials also acknowledge that for more than a year they avoided striking tanker trucks to limit civilian casualties. "None of these guys are ISIS. We don't feel right vaporizing them, so we have been watching ISIS oil flowing ▶

◀ around for a year," says Knights. That changed on Nov. 16, when four U.S. attack planes and two gunships destroyed 116 oil trucks. A Pentagon spokesman says the U.S. first dropped leaflets warning drivers to scatter.

Beyond oil, the caliphate is believed by U.S. officials to have assets including $500 million to $1 billion that it seized from Iraqi bank branches last year, untold "hundreds of millions" of dollars that U.S. officials say are extorted and taxed out of populations under the group's control, and tens of millions of dollars more earned from looted antiquities and ransoms paid to free kidnap victims.

The taxes bring in real money. One example: Islamic State allows policemen, soldiers, and teachers in its territory to atone for the "sin" of having worked under religiously inappropriate regimes—for a fee. Forgiveness comes in the form of a repentance ID card costing up to $2,500, which requires an additional $200 a year to renew, according to Aymenn Jawad al-Tami, a fellow at the Middle East Forum who closely follows the group.

Arguably the least appreciated resource for Islamic State is its fertile farms. Before even starting the engine of a single tractor, the group is believed to have grabbed as much as $200 million in wheat from Iraqi silos alone. Beyond harvested grains, the acreage now controlled by militants across the Tigris and Euphrates river valleys has historically produced half of Syria's annual wheat crop, about one-third of Iraq's, and almost 40 percent of Iraqi barley, according to UN agricultural officials and a Syrian economist. Its fields could yield $200 million per year if those crops are sold, even at the cut rates paid on black markets. And how do you conduct airstrikes on farm fields?

For his part, Bahney contends that the group's real financial strength is its fanatical spending discipline. Rand estimates the biggest and most important drain on Islamic State's budget is the salary line for up to 100,000 fighters. But the oil revenue alone could likely pay those salaries almost two times over, Bahney says. He also believes they've been running at a surplus. Bahney says that if the U.S. and its allies are going to diminish the threat from Islamic State, they must recognize that knocking out oil, while critical, isn't enough. "They've built up quite a bit of excess cash flow in the last year," he warns. "So they're going to be able to keep this going for a while." Ⓑ

—With Donna Abu-Nasr in Beirut and Larry Liebert in Washington

Paris Must Not Lead To Barricades

After terrorists strike, the first instinct is to raise walls. But democracies thrive on openness. By Peter Coy

The priority of every person and every society is to survive. President François Hollande declared the emergency closing of France's borders after terrorists struck Paris on Nov. 13. The following Monday he announced to Parliament, meeting in Versailles, that Europe as a whole must keep out enemies, or France will take matters into its own hands. Lives, he said, were at stake. "If Europe doesn't control its external borders, it is the return of national borders or walls and barbed wire," Hollande said. After the speech he and the lawmakers sternly sang *La Marseillaise*.

It's not just a shaken France that's talking about walls and barbed wire. Hungary just built a wall along its border with Serbia. India has walled itself off from Bangladesh. Israel has fenced the West Bank and Gaza. Morocco built a sand berm to block attacks by separatists from Western Sahara. And in the U.S., Donald Trump leapt to the front of the race for the Republican presidential nomination by promising to build "the greatest wall that you've ever seen" on the long border with Mexico.

A wall going up is prima facie evidence that something bad is going down. Terrorism isn't the only thing, of course: Trump and Hungarian Prime Minister Viktor Orban have both mentioned keeping out rapists and job stealers as justifications for their barriers. But terrorism is what has taken wall building from a fringe concern to the mainstream. Concrete barriers, metal fences, barbed wire, searchlights, guard dogs, and jeep patrols along borders are physical evidence of the damage that terrorism has done to the sense that we're all in this together.

The tragedy is that walls hurt those who obey the law more than terrorists, who usually find a way to go over, under, or around them. What's worse, isolating entire communities and nations because potential terrorists live among them often backfires, engendering more of the hatred that it's meant to protect against. That's what makes terrorism so diabolical: Like an autoimmune disease, it provokes civilized societies to behave in self-defeating ways.

A terrorism-induced backlash against migration would harm rich and poor alike. Wealthy, aging nations need young workers, while immigrants need jobs and money to send home to their families. Nations such as Japan that are allergic to immigration are paying a stiff price for their splendid isolation in terms of low growth, while immigration-friendly countries like Germany are reaping rewards. Even in this chaotic year, the German Institute for Economic Research in Berlin calculates that the immigration surge will account for about 0.2 percentage points of Germany's estimated 1.8 percent output growth, mostly because of the Keynesian stimulus of higher government spending.

Europe provides some of the strongest evidence of the benefits of openness. Per capita income would now be 50 percent lower in Ireland and 25 percent lower in Denmark and the U.K. if they hadn't joined the predecessor to the European Union in 1973, according to a calculation by Nauro Campos of Brunel University, Fabrizio Coricelli of the Paris School of Economics, and Luigi Moretti of the University of Padova published last year by the U.K.-based Centre for Economic Policy Research.

Europe's Schengen agreement, which allows passport-free travel between signatory nations, is at risk of unraveling under the stress of mass migration (itself

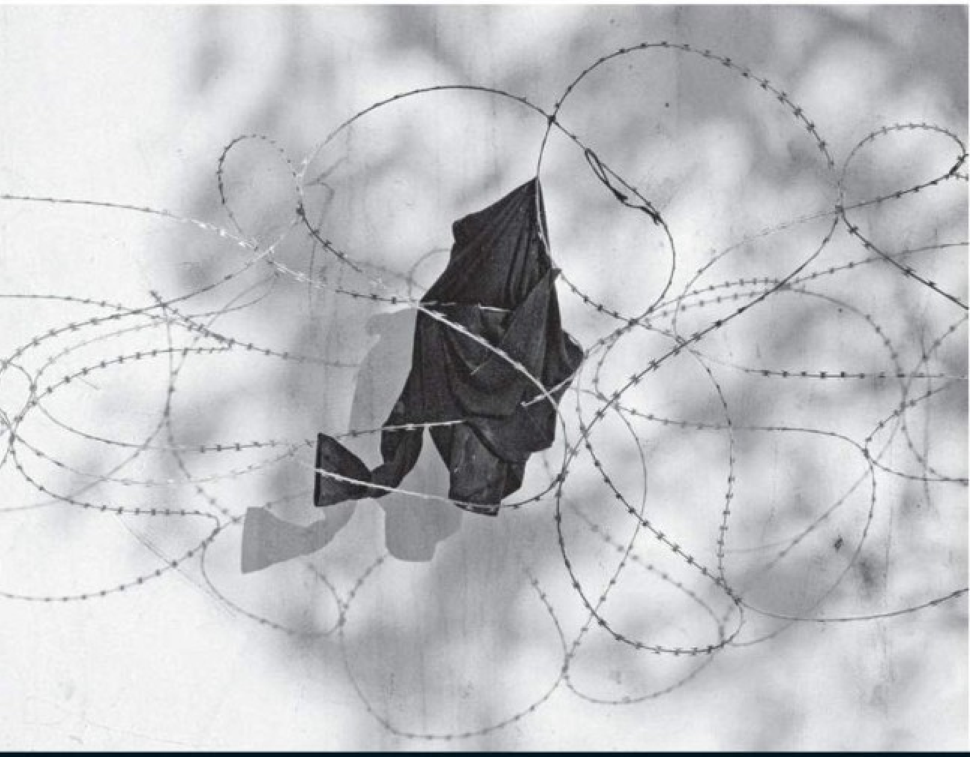
PREVIOUS SPREAD: YANN RENOULT; THIS SPREAD: ALEX MAJOLI/MAGNUM PHOTOS fueled by terror in the Middle East) and now the Paris attacks. Schengen, concluded in 1985 and effective since 1995, is one of the proudest achievements of modern Europe—more popular and more widely adopted than the euro. The ability to drive between countries without so much as tapping the brakes has promoted tourism, trade, and the free movement of labor. Italian companies do more business with the Swiss, because their trucks don't get stopped at the border. And Chinese tourists are more likely to visit Germany if they know they can swing through France and Spain as well without getting another visa. When two countries are in Schengen, trade between them increases an extra 0.1 percent each year, says Dane Davis, a commodity researcher who co-wrote a paper on Schengen published last year in the *World Economy*, an academic journal.

To young, cosmopolitan Europeans, the threat to reimpose border controls inside Europe is as alarming as it would be to Americans if New York announced it was going to check documents at the George Washington Bridge. Austria, the Czech Republic, Germany, the Netherlands, Slovakia, Slovenia, and Sweden have begun some form of emergency border checks. If Schengen dissolves, trade and investment ties could begin to unravel as well, because countries would begin to lose the sense of European unity, says Adriano Bosoni, a Barcelona-based analyst for geopolitical consulting firm Stratfor. "Once you start abolishing the founding principles of the EU, it's like a domino effect," he says.

A terrorism-induced backlash against migration would harm rich and poor alike

The trick, as always, is to target the bad guys—terrorists, organized criminals—without harming innocent people in the communities that they've wormed their way into. Walls rarely accomplish both goals. The fence between India and Bangladesh has stopped trade in fish but not in contraband Indian-made cough syrup, consumed as a narcotic, that "is wreaking havoc with our youth," Bangladeshi social activist and business leader Sabera Ahmed Koli told Al Jazeera.

There's mounting evidence that Western banks have overreacted in complying with anti-money-laundering laws aimed at cutting off terrorists' access to financing. Through strict implementation of the new rules, big banks are making it harder for people to remit money to family members and "driving people to go back to informal channels where [the transactions] are less visible," says Nestor Espenilla Jr., deputy governor in charge of supervision at the central bank of the Philippines. In Somalia, "the fear is that without remittances, the terrorist group Al-Shabaab will take advantage of the desperation of Somalis," Representative Keith Ellison (D-Minn.) said earlier this year. A U.S. Department of Treasury spokesman says it's "working hard to facilitate legitimate financial flows."



Terrorists are quick to work their mind games on immigrants who feel isolated or abandoned in the wealthy nations they now call home. It's worth remembering that most refugees want nothing to do with terrorists, who since 2000 have committed 97 percent of their murders in poor nations such as Nigeria, Syria, and Afghanistan, according to the Institute for Economics and Peace. In the U.S. and in Europe, governments need to strengthen their ties to immigrant communities to get early warning signs of disaffection, anger, and radicalization, says Eli Berman, a specialist on the economics of terrorism at the University of California at San Diego. In other words, break down walls that terrorists would rather build higher. Says Berman: "Radicalism is all about creating distance from mainstream society."

Hope, not walls, is the best protection against terrorism, says Jamal Nassar, a political scientist at California State University at San Bernardino, who was born in Jerusalem two years before Israel was founded in 1948. "You cannot build a wall around the world. People will find a way, tunnel under walls, fly over. They will find a way if they are determined to bring about violence." Conversely, Nassar says, "when there is light at the end of the tunnel, people will move forward and try to improve their lives."

That ode to openness is hard to absorb when the killers are at your door. The tendency is to withdraw, to defend. And politicians don't help matters when they play to the worst instincts of their people. Governors of at least 26 U.S. states have said they oppose efforts to have refugees from Syria relocated to their states. In Germany, Chancellor Angela Merkel is under fire from opposition politicians for inviting about 1 million asylum seekers into the country this year. To his credit, Hollande isn't all about barriers. He vowed on Nov. 18 to take in 30,000 immigrants over the next two years.

The best reason not to wall oneself off is that most people around the world, most of the time, are pretty reasonable. Islamic State is a dramatic exception. Ultimately, though, its bloody extremism makes Islamic State its own worst enemy. Even al-Qaeda doesn't like it. Says Berman, the expert on the economics of terrorism: "The suicidal shooter, that's an effective strategy. The suicidal caliphate, that's a doomed strategy." Ⓑ

To read Mark Whitehouse on fighting poverty in Baltimore and A. Gary Shilling on Chinese consumers, go to
Bloombergview.com

Rubio Makes a Good Point About Welders

Vocational education can lead to better-paying jobs than many college degrees can

Marco Rubio has done America a great service by offending its chin-scratchers and navel-gazers. "Welders make more money than philosophers," the senator declared at the Republican debate on Nov. 10. "We need more welders and less philosophers."

Fact-checkers pointed to the data showing that philosophy professors earn more than welders. But there are fewer job openings for would-be philosophy professors, and, in any event, the Florida senator's essential point is correct: Many jobs for skilled tradespeople pay more than those requiring academic credentials. There just aren't enough qualified workers to fill them.

Rather than give this shortage the attention it deserves, presidential candidates in both parties have focused on reducing—or in Senator Bernie Sanders's case, eliminating—the cost of college and its debt burdens. But what about people who don't want to go to college?

Many skills that are essential to a high-performing economy—and that, in fact, garner middle-class wages—aren't taught in colleges and universities. Welding is just one example. Carpenters, electricians, ironworkers, machinists, masons, mechanics, steamfitters, plasterers, plumbers, and technicians of every kind earn incomes that often exceed those for white-collar jobs. Indeed, many other skilled trades people do so as well.

An 18-year-old who spends four years as an apprentice plumber might earn a total of $100,000 or more during that span and avoid paying the same amount of money in tuition for college. After the apprenticeship, that young plumber can make $50,000 a year, with the prospect of steady income growth over the span of a career: Master plumbers can earn $100,000 to $200,000 annually.

The typical college graduate in the U.S. makes about $60,000 at the peak of his or her career and is likely to pay about $3,000 a year in loans. And of course, many young people who start college, especially community college, never finish.

Too often, high school students are unaware of these facts and uninformed about training programs in the trades. The shortage of welders alone is expected to reach almost 300,000 by 2020.

To fill this need and improve the prospects of millions of young people, guidance counselors and teachers need to shift their thinking about the skilled trades. Rubio, however, hasn't detailed how he would go about expanding vocational training; and, unfortunately for voters, the debate moderators didn't ask. Next time, they should—and not just of the junior senator from Florida.

The Asian Way Out of a European Impasse

The TPP may provide the template for resolving a dispute between the U.S. and the EU

There are 10 million reasons for Europe to shed its resistance to a trade deal with the U.S.—that's the number of European jobs that depend on American exports. But negotiations are bogged down over a proposal by the European Union to change the way that governments and investors settle disputes.

Differences over the same issue almost derailed last summer's Trans-Pacific Partnership negotiations. The solution reached in the TPP provides a ready-made template for a European trade deal.

The rationale for the traditional arbitration process for investor-state disputes is that it enables foreign companies to bypass host-country courts, which can be biased in favor of their government's position. But in July the European Parliament, which gets a vote on the final trade deal, instructed trade negotiators to replace that arbitration process, now embedded in thousands of trade treaties.

They might have looked to the TPP as a model for a sensible update. That deal incorporates many of Europe's current demands, such as making the proceedings public and allowing interested third parties to weigh in. It clarifies that the companies that bring the cases bear the burden of proof and requires countries to have ethics codes for private-sector lawyers who act as arbitrators.

The TPP also strengthens the hand of government by making it clear that countries have the right to regulate in the public interest. Tougher banking rules to maintain financial stability, for instance, or regulations to control carbon emissions, couldn't be upended by a settlement in an investor-state dispute.

The U.S. and EU trade talks are gaining momentum. It would be a shame if a dispute over disputes brought them to a halt. B

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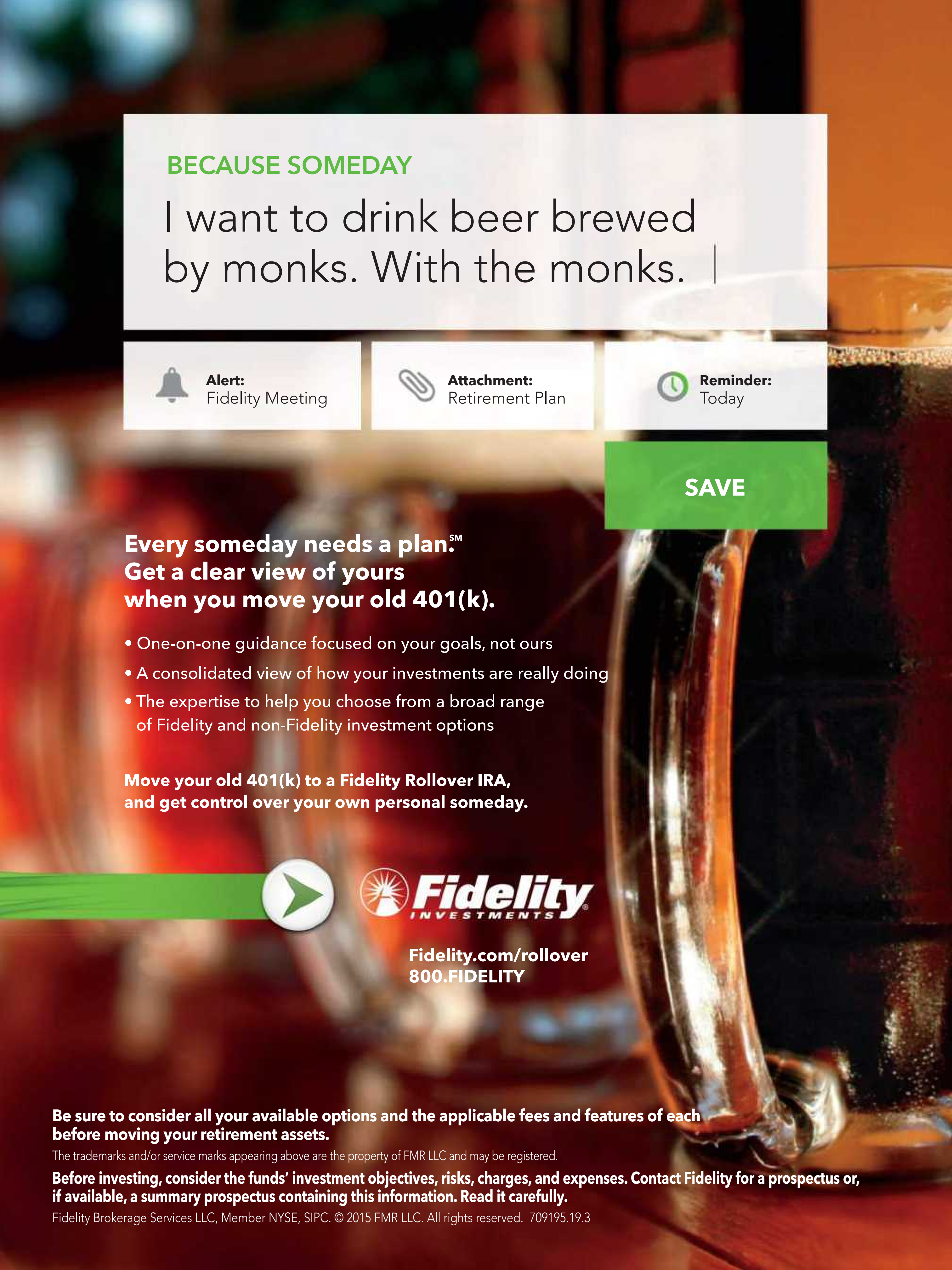
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November 23 — November 29, 2015

Brazil's Latest Quagmire

▶ The waste from an iron ore mine breached a dam, destroying a town and shocking the nation

▶ "The punishment will serve as an example to avoid other accidents as serious as this"

The mines gouged out of the nearby hills never sullied the bucolic feel of Bento Rodrigues. The tiny town by a gurgling river in central Brazil benefited from the mines, first when the Portuguese dug for gold and now when the Chinese buy iron ore for their steel mills. The open pits and the sea of sludge, held back by massive earthen dams, were out of sight of the town's colonial-era homes and church.

All that changed at about 4:20 p.m. on Nov. 5. Jose do Nascimento de Jesus was home making guava juice when he heard what sounded like a hailstorm. A neighbor shouted, "Run! The dam broke!" A tsunami of sludge was barreling down the valley. De Jesus and other townspeople screamed for Darci dos Santos to flee with her 7-year-old grandson, Tiago, but the two couldn't be roused from their nap. As mud swallowed a nearby house, De Jesus headed to high ground. The town was gone in minutes. A helicopter pulled Dos Santos out of the mud. Rescuers found Tiago's body six days later, more than 60 miles downstream. Ten others died; a dozen are missing; five of every six townspeople are homeless.

In town meetings with **Samarco**, the mine's operator, De Jesus, the president of Bento Rodrigues's residents association, says he and others repeatedly voiced concern that a dam might burst. "We asked them," he says, "and they always said, 'No, if only your life were as safe as this dam.'" State inspectors deemed the dams sound and used a Samarco-financed annual audit to classify them as "guaranteed stable," reports from the mining regulator's office show. Samarco is co-owned by **Vale** and **BHP Billiton**.

For years, the mine dumped water mixed with sand and other waste behind a huge earthen dam, a practice used safely in mines everywhere. When the dam collapsed, 50 million cubic meters of sludge poured out, according to Brazil's environmental ministry, enough to fill the Great Pyramid of Giza 20 times. It was the biggest failure of a mining waste dam in history, says the Center for Science in Public Participation, a Bozeman (Mont.) nonprofit that studies mining dams. The mudflow surged down rivers for hundreds of miles toward the Atlantic, interrupting the drinking water supply for more than 260,000 people and threatening coral reefs and turtle nesting areas. On Nov. 17, Samarco said that two nearby dams were at risk and were being shored up.

Brazilian officials are calling for accountability. "I think the punishment will serve as an example to avoid other accidents as serious as this," says Sandra Cureau, the federal prosecutor leading the task force formed to

FELIPE DANA/AP PHOTO

"We asked them, and they always said, 'No, if only your life was as safe as this dam.'" —Jose do Nascimento de Jesus, president of Bento Rodrigues's residents association

investigate the breach. Carlos Eduardo Pinto, a prosecutor in the state of Minas Gerais, says, "This is a case of severe negligence all around." He says there was no reliable warning system. "The only communication we had was the mud arriving," De Jesus says. Samarco says it had a government-approved emergency plan that it activated after the dam broke. The company didn't comment on whether it failed to alert residents before the mudflow.

Two years ago, Pinto investigated Samarco's request to expand the dam as part of the licensing process. He commissioned a study by the Instituto Prístino, an environmental research organization, which flagged the risk of the dam bursting. Pinto says he opposed expansion until Samarco agreed to monitor the dam's structural integrity more closely and frequently. The company pledged to make changes, and the project was approved, he says. "It's clear they failed, or this tragedy wouldn't have happened."

The Minas Gerais State Environmental and Water Resources System, which licensed the expansion, used the Samarco-funded audits to declare the dam safe in July, as required by law, a spokeswoman says. Inspectors planned a visit in December. The federal mining safety agency, which had to slash spending this year, last inspected the failed dam in 2012, a spokesman says.

There are signs the dam's reservoir was getting overloaded with waste from nearby Vale-owned mines, possibly without proper permits, Pinto says. "These are all serious allegations," he says. Vale says it has a contract to pay Samarco for the right to dump some of its waste behind the Samarco dams, but only 4.5 percent of it came from Vale's mines last year. Samarco declined to comment except to say the dams weren't operating at capacity.

The devastation in Bento Rodrigues

A mining union executive director, Sergio Alvarenga, says that since 2013 Samarco has been rapidly increasing production to offset lower iron ore prices. This year, Samarco raised its 2015 production goal to 30 million tons, an increase from 27 million estimated at the beginning of the year, says Alvarenga, who's worked for Samarco for 31 years. "This pressure started exactly when there was the fall in ore prices and the need to produce more."

Brazil's regulators are promising a clampdown, possibly creating longer delays for licensing new projects, says Danilo Miranda, a lawyer who represents mining companies. Cleanup costs could top $1 billion, according to Deutsche Bank. Regulators might shut Samarco's mine for years or even permanently. Samarco faces hundreds of millions of dollars in fines and compensation. On Nov. 16, Samarco signed an agreement with prosecutors to pay $265 million in damages and cleanup costs. A $2.5 billion lawsuit has been filed by a community group.

As rescuers searched for bodies, President Dilma Rousseff was hosting Japan's Princess Akishino in Brasilia, visiting a subway project in Rio de Janeiro, and inaugurating low-income housing. Seven days after the breach, she toured the disaster area by helicopter. "The government really failed—it should have given an immediate response to Brazilian society," says Cureau, the federal prosecutor.

The chief executive officers of BHP and Vale promise to help Samarco assist victims, repair the damage, and reopen the mine. "We are deeply sorry to everyone who has and who will suffer from this terrible tragedy," BHP boss Andrew Mackenzie said in a Nov. 16 conference call with investors.

At Bento Rodrigues, the surviving homes are mud-covered shells, and two stray dogs roam the wreckage where the church once stood. De Jesus says ▶

Digits

39%

Japan is tied with Italy for the most quarterly contractions

Percentage of quarters since mid-1996 in which Japan's economy contracted. Two recessions have occurred since Prime Minister Shinzo Abe took office in late 2012.

◀ the best people can hope for is that Samarco will build a town for them elsewhere. "They can give us everything, but we'll never have the dignity we had living in that place," he says. "And there is no money that can ever pay for that." *—Michael Smith and David Biller, with Yasmine Batista and Anna Edgerton*

The bottom line A pond of iron ore tailings burst its dam in central Brazil, sending 50 million cubic meters of sludge through the countryside.

Commodities

India's Drier Monsoon Drags Down Gold Sales

▶ **A bad harvest means farmers are buying less of the metal**

▶ **"Below average rain will definitely have had an impact"**

For insight into the weakening gold market, talk to an Indian farmer. In a country where an estimated 800 million people depend on agriculture for their income and many revere gold as an ornament and store of wealth, farmers flush with cash during harvest season have made India one of the world's biggest buyers of bullion.

Sales usually escalate in November, during the Diwali festival season. Farmers and rural Indians account for almost 60 percent of gold consumption in India—they buy gold as religious offerings and elaborate wedding adornments for a bride's dowry.

This year, the El Niño weather system has led to the driest monsoon season in six years, with 14 percent less rainfall than last year. Earlier reports predicting higher rainfall proved overly optimistic. The reduced farm output, especially sugar and cotton, and resulting lower incomes damped demand for gold. Gold imports to the state of Gujarat, where farmers grow cotton and wheat, fell 87 percent in October from a year earlier, according to a report in the *Times of India*. Overall imports in September tumbled by 52 percent from their August levels.

"Demand in India is very, very poor," says Afshin Nabavi, head of trading and physical sales at **MKS**, a Swiss refiner that owns a stake in India's largest gold refinery. "The monsoon is so important in Indian gold demand, below average rain will definitely have had an impact." Gold dealers who stocked up before Diwali were offering some of the biggest prefestival discounts in decades, further pushing down prices. "They got carried away and imported too much," Nabavi says.

The price of gold has been in steady decline, falling to a five-year low of $1,064.55 a troy ounce on Nov. 18. That's 45 percent lower than the all-time high of $1,921.17 in September 2011. Importers were selling wholesale gold from $4 to $11 below the prevailing price on the international market in the weeks running up to Diwali, according to a survey of analysts and traders. Dealers typically charge large premiums at this time, Nabavi says.

The effect of poor rains was magnified by a weaker local currency relative to the dollar in the weeks before Diwali, which made it harder for farmers to afford gold, according to James Steel, the chief commodities analyst at HSBC Securities. "We're looking at a wholesale market that's well-supplied and a retail market that's not as strong as many had thought following below-average rainfall," he says.

Michael Mesaric, chief executive officer of **Valcambi**, one of Switzerland's largest gold refiners, cut his outlook for annual Indian imports by 100 metric tons, to 850 tons, in part because of weaker demand. Imports averaged 875 tons in the past five years, according to data from precious metals consulting firm Metals Focus.

India and China are the world's biggest buyers of gold, accounting for more than half of consumer demand in 2014, according to the World Gold Council. Typically when Western investors sell, both countries step in to buy, keeping prices from dropping more. This time, with Chinese growth slowing and Indian farms producing poor yields, prices may not bounce back as quickly after a drop. "India and China are pivotal," says Suki Cooper, a precious metals analyst at Standard Chartered. "Without strong demand" from the two countries, "prices could fall further this year." *—Eddie van der Walt and Swansy Afonso*

The bottom line Lower demand from China and India, the biggest buyers of gold, has contributed to declines in the price of the metal.

Taxes

The Town Viagra Built Tries to Move On

▶ **A tax break played a role in the decline of Puerto Rico's economy**

▶ **"There were all these people competing for the same jobs"**

In December, the Puerto Rican government may default on its bond payments after years of overborrowing—it owes $70 billion—and lack of growth. The origins of the crisis lie partly in a tax break that enriched and then devastated the Puerto Rican economy.

"We're responsible for a lot of good moments," **Mayor Wanda Soler Rosario** says in her office in Barceloneta's city hall. After **Pfizer** won U.S. Food and Drug Administration approval for Viagra in 1998, it chose a plant in the city to produce the drug that helped millions of men overcome impotence.

PHOTOGRAPH BY CHRISTOPHER GREGORY FOR BLOOMBERG BUSINESSWEEK

The pineapple-and-sugar-cane town was transformed into one of the biggest concentrations of pharmaceutical manufacturing in the U.S.

Barceloneta and other Puerto Rican towns were the beneficiaries of Section 936 of the Internal Revenue Code, which provided a tax exemption for mainland U.S. companies, mostly manufacturers with operations in Puerto Rico and other U.S. territories. At the peak, 14 pharmaceutical and other plants operated in Barceloneta, a city of 25,000.

That golden age of subsidized prosperity is over. In the mid-1990s politicians of all stripes came to oppose the tax break. Pro-statehood groups said the exemption perpetuated colonialism. On the mainland, it was seen as corporate welfare—U.S. taxpayers lost $3.9 billion in 1994 alone, according to the U.S. Government Accountability Office. President Bill Clinton signed a bill in 1996 phasing out 936 over 10 years. Puerto Rico saw a slew of pharmaceutical and manufacturing plant closures caused by recession, mergers, and slow sales. Pfizer stopped making Viagra in Barceloneta in 2008. "There was some expectation that jobs would be lost," says Elias Gutiérrez, an economist at the University of Puerto Rico. "But that was optimistic. It's been catastrophic."

Manufacturing jobs have fallen from 161,100 in January of 1996 to 73,000 this September. In 2006, Puerto Rico fell into a recession it's yet to escape. "It was a huge hit to an economy in a tiny period," says Antonio Medina, executive director of the Puerto Rico Industrial Development Co., which is charged with attracting manufacturers. "Since Puerto Rico became part of the U.S., there have been tax policies to drive investment to the island. The last 10 years are the anomaly."

From tuna canners to glue makers, the manufacturers that had helped industrialize Puerto Rico began to close. When Barceloneta hit bottom, 1 in 4 adults were unemployed, says the mayor's office; today the jobless rate is closer to 12 percent. "Ending 936 killed us," says Hiram Aguila, who landed a job in a pharmaceutical plant right out of high school in 1989. "You started to see this factory close, then that factory close, and all of a sudden there were all these people competing for the same jobs and nobody was hiring."

Aguila was earning $21.85 an hour when he was laid off in 2009 after a **Sanofi-Aventis** plant cut its payroll. He then made $200 a week at his father's convenience store. Bills mounted. The stress caused a divorce. Now earning $10 an hour working for the city, Aguila may move to Orlando.

Manufacturing jobs have stabilized recently as Puerto Rico stresses the experience of its workforce and the low cost of doing business. Development officials have persuaded five pharmaceutical and health product companies to reopen factories in the past two years. The island still pumps out medicine, including **AstraZeneca**'s cholesterol treatment Crestor. "We have everything we need from a technical standpoint to build on our base and grow the sector," says Ivan Roman, an adviser to the board of the Pharmaceutical Industry Association of Puerto Rico. What's missing, he says, is some exemption from federal taxes.

Barceloneta is diversifying. Next year, **Wyndham Hotel Group** will open a $65 million seaside resort there. The city already has the island's biggest outlet mall, and Mayor Soler wants to lure more chains to open shops. She's gotten the city to finance businesses, starting with a barbecue restaurant in a once-vacant downtown storefront.

But retail jobs aren't going to solve Puerto Rico's problems. "All jobs are good, and all jobs are important," says Industrial Development's Medina. "But the difference is, a manufacturing job making $60,000 to $80,000 a year actually creates the shoppers that support the retail job making $15,000 to $20,000." —*Ezra Fieser*

The bottom line After Section 936 was repealed, the number of manufacturing jobs went from 161,100 in January 1996 to 73,000 in September.

Edited by Christopher Power and Dimitra Kessenides
Bloomberg.com

Katniss Can't Go On Forever

▶ **Teen-focused studio Lions Gate braces for life after its biggest franchise ends**

▶ **"It's kind of an end of an era. There really isn't a next-in-line yet"**

Lions Gate Entertainment, the largest independent U.S. movie studio, made its name adapting young adult novels into films, including the vampire romance series *Twilight* and the *Divergent* sci-fi movies. Now, with the fourth and final installment of its *Hunger Games* series opening on Nov. 20 in North America, the studio finds itself without an obvious replacement at a time when multi-film franchises have never been more important to Hollywood. "It's kind of an end of an era," says Jeff Bock, senior box-office analyst with industry researcher Exhibitor Relations. "There really isn't a next-in-line yet."

Investors got a taste of that uncertainty on Nov. 9, when Lions Gate reported a surprise loss after its Vin Diesel movie, *The Last Witch Hunter*, bombed in theaters and forced it to quickly write down the clunker. The next day two companies in cable billionaire John Malone's empire, **Liberty Global** and **Discovery Communications**, agreed to buy 6.8 percent of the studio. That added to the speculation that Lions Gate—which has a growing television business, producing shows such as ABC's *Nashville* and Netflix's *Orange Is the New Black*—could find itself at the core of a media content consolidation by Malone.

The studio is trying hard to hang on to its franchise strategy, which allows subsequent movies to open with a built-in fan base. The third *Divergent* film will open in March, and a fourth is planned. Almost half of Lions Gate's release schedule over the next few years is sequels or potential franchise films, including Part 2 of the magician thriller *Now You See Me* and a second *John Wick*, an action feature with Keanu Reeves. The studio is making the fantasy film *Gods of Egypt* and has a *Power Rangers* picture on tap, based on the 1990s TV series. Lions Gate has also acquired the rights to *Chaos Walking*, another dystopian book series that's won a number of children's book awards in the U.K. All three seem candidates for sequels.

Yet none of the studio's future efforts looks set to equal the *Hunger Games* films, which have generated $2.3 billion in theaters worldwide, according to researcher Box Office Mojo. "They've made a lot of money from the *Hunger Games* franchise, but that profit largely comes to an end next year," says Doug Creutz, a Cowen analyst. To make matters worse, "there are only more competitors trying to do the same as Lions Gate."

Other studios that have piled onto the young adult bus have had mixed results. **20th Century Fox** had a hit with its 2014 film *The Maze Runner*—yet another young adult book-turned-movie about teenagers in peril in a dark futuristic world. The film grossed $348 million globally, and a second installment in September brought in almost $310 million, according to Box Office Mojo. A third in the series is planned for 2017. But Fox's *Me and Earl and the Dying Girl* failed to deliver results like last year's low-budget hit *The Fault in Our Stars*, taking in only $9 million worldwide this summer. **Warner Bros**.' *Beautiful Creatures* in 2013 didn't cover its $60 million production budget. In January, **Sony** will release *The 5th Wave*, born of another young adult sci-fi book trilogy.

Industry consultant Russell Schwartz, co-principal at Pandemic ▶

PHOTO ILLUSTRATION BY 731; PHOTO: LIONS GATE/PHOTOFEST

◀ Marketing and a former marketing executive at New Line Cinema who worked on the *Lord of the Rings* trilogy, says studios are finding it harder to grab the attention of younger viewers. "This audience is getting more discerning," Schwartz says. "They are just not running after everything. It's not as dependable an audience anymore."

Lions Gate Series Box Office

- ***Twilight*** (five films) $3.34 billion
- ***The Hunger Games*** (three films) $2.3 billion
- ***Saw*** (seven films) $873 million
- ***Divergent*** (two films) $586 million

But analysts say Lions Gate has benefited from acquiring strong source material to turn into movies. "Management believes that Lions Gate is still the first destination for authors with new storylines," says Eric Wold, an analyst at B. Riley. "And we believe that as long as there are young adults seeing movies, there will be an audience for young adult films."

Lions Gate's new *Hunger Games* film, *Mockingjay Part 2*, is expected to pull in $320 million in North American revenue for its full theatrical release, the least of all the films in the series, estimates BoxOffice.com. One possible problem this time around: high public interest in **Walt Disney**'s new *Star Wars* film, *The Force Awakens*, which opens a month later.

On a Nov. 10 analysts call, Chief Executive Officer Jon Feltheimer trimmed his long-term profit outlook for Lions Gate, citing the disappointing performance of its recent films and pushed-back release dates for future movies. The company now forecasts $1.1 billion to $1.2 billion in earnings before interest, taxes, depreciation, and amortization from 2015 through 2017—down about $100 million from earlier projections.

That's hardly a disaster, says B. Riley's Wold. Besides, he says, the company likely isn't done with the characters that attracted young moviegoers to the tale of a future where teens fight to the death on national television, pitting survival against love. Feltheimer hinted as much earlier this year during an analysts call. "It's pretty clear there is a prequel of *The Hunger Games* on the horizon," Wold says, "and I think if that gets confirmed and announced, then a lot of people's concerns about this cliff change pretty quickly." The company declined to make executives available for interviews.

Lions Gate is also trying to extend the life of *The Hunger Games* by licensing the name for theme park attractions in Dubai, Atlanta, and China—an opportunity the company sees adding as much as $100 million in profit over the long term. But some analysts have doubts. Says Cowen's Creutz: "It's hard to imagine a *Hunger Games* theme park as a fun destination." —*Anousha Sakoui*

The bottom line The *Hunger Games* films have $2.3 billion in ticket sales—so far. But as the series ends, studio Lions Gate's next move is uncertain.

Drugs

What Goes Up—But Doesn't Come Down

▶ **After shortages, prices of hospital medicines often stay aloft**

▶ **Drug companies "are pushing for whatever they can get"**

Even the cost of routine drugs can defy the usual laws of economics. Case in point: glycopyrrolate, a hospital staple used to dry up secretions before surgery. After **Daiichi Sankyo**'s Luitpold Pharmaceuticals division temporarily closed a factory producing the medicine in 2012 to fix quality-control problems, **Hikma Pharmaceuticals**—the only other maker—raised prices on its injectable version of the drug more than 800 percent over the next year. Both companies are again making the drug. Yet despite the now-plentiful supply, Hikma's price remains more than eight times higher than in early 2013. And Luitpold has followed suit.

Glycopyrrolate's pricing is hardly an isolated event. All sorts of hospital meds, from drugs for an irregular heartbeat to supplies as basic as saline solution, are in increasingly short supply. The reasons are varied: aging factories, quality-control issues, shrinking ranks of suppliers due to mergers and acquisitions. But the end result is surprisingly similar: higher prices that don't easily fade, even after the shortage ends.

"It's a broken market," says Stephen Schondelmeyer, a pharmacist and economist at the University of Minnesota. "Drug companies know there is going to be an end to this blank-check era, and they are pushing for whatever they can get."

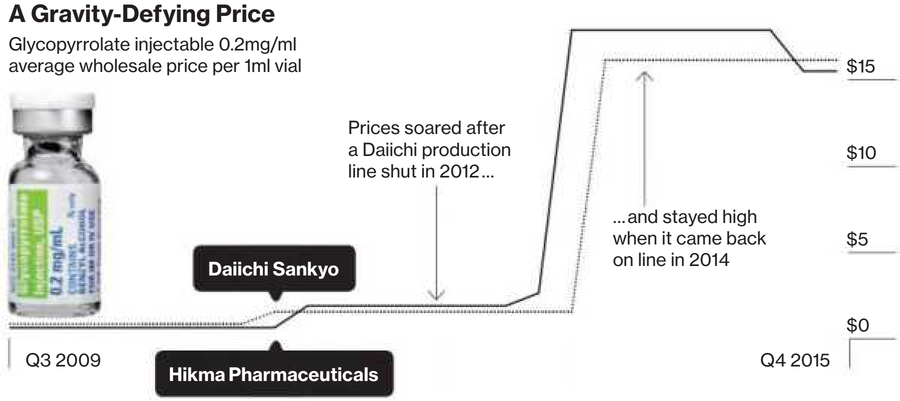
Hikma says the higher prices helped cover the cost of raising supply and moving production to a new Portugal plant after it lost a supplier.

A survey conducted for Bloomberg of 3,700 formulations of generic hospital drugs found more than 400 have at least doubled in price since late 2007, including 50 that have gone up at least tenfold. Roughly 25 percent of all older hospital drugs have gone up faster than the rate of inflation during that period, according to the survey of average wholesale prices by DRX, a unit of Connecture that provides price comparison software for health plans.

The price of procainamide, a drug from **Pfizer**'s Hospira unit that calms irregular heartbeats, has risen about fifteenfold in that period, according to DRX. Injectable papaverine, an older blood vessel dilator made only

A Gravity-Defying Price

Glycopyrrolate injectable 0.2mg/ml average wholesale price per 1ml vial



by Luitpold, costs 700 percent what it did eight years ago.

Hospira says its manufacturing costs have risen substantially. It's invested more than $1 billion to ensure the supply of lifesaving drugs, says Pfizer spokesman MacKay Jimeson. Papaverine price increases, over a longer time frame starting in 2003, were "less than half" the increase shown over eight years in the DRX numbers, according to Luitpold.

Even greater demand for salt water–saline solution–has caused shortages, prompting Senators Orrin Hatch (R-Utah), Richard Blumenthal (D-Conn.), Mike Lee (R-Utah), and Amy Klobuchar (D-Minn.) to ask the Federal Trade Commission to probe "possible illegal collusion" by saline makers **Baxter International**, Hospira, and **B. Braun Medical**, according to an Oct. 26 letter to the FTC. It said that since the shortage began in late 2013, "suppliers are reported to have increased their prices by 200-300 percent."

Baxter and B. Braun dispute the degree of the price increase, and Baxter and Pfizer say their prices are fair. "The cost of this Baxter prescription product is less than a cup of coffee," says Baxter spokesman William Rader. Pfizer says it responded to the shortage in 2013 by expanding production to 24 hours daily. "B. Braun is spending millions of dollars to increase capacity," says spokeswoman Constance Walker, calling the collusion allegation "ridiculous."

To ease the shortage, the U.S. Food and Drug Administration allowed temporary saline imports from overseas makers, "something that we've had to do more and more in recent years," says Valerie Jensen, associate director of the drug shortage staff at the FDA.

A big reason prices are soaring for generic hospital injectable drugs is that they've long been seen as low-margin commodities lacking big moneymaking potential. So many manufacturers have stopped making them, often leaving just a few makers with more pricing power.

"When you only have one or two suppliers of these products, sometimes three if you are lucky, one company may have large market share, and if you have a glitch you have a shortage," says Erin Fox, director of the drug information service at the University of Utah. Once a shortage is resolved, the price may ease, says John Lewin, director of the critical-care and surgical pharmacy at Johns Hopkins Hospital in Baltimore, but it "never goes back to what it was."

Rena Conti, a professor of health policy and economics at the University of Chicago, says the average number of makers of injected cancer drugs had started to decline before the shortages hit, falling from 3.04 per drug in 2001 to 2.3 per drug in 2007, according to a recent analysis she did. "Eventually," she says, "you have one or two manufacturers left standing, and they are monopolies in perpetuity."

—*Cynthia Koons and Robert Langreth*

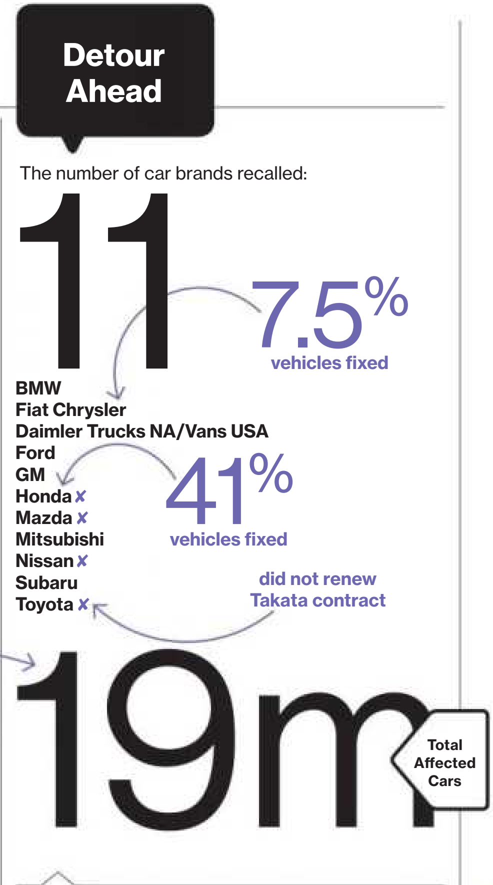
The bottom line The prices of more than 400 generic hospital drugs have at least doubled in the past eight years. Fifty went up tenfold.

Autos

Why Takata's Recall Is Stalled

▶ **Most of the vehicles affected have yet to get new air bags**

▶ **"Waiting four years for replacement parts is too long"**



Craig Jorgensen owns a Honda CR-V and a Toyota Avalon, both originally fitted with potentially deadly air bags made by **Takata**, the object of the biggest safety recall in U.S. automotive history. The Honda was fixed within days after he received letters in June saying the bags had to be swapped out. But five months later, his local Toyota dealer has no idea when replacement parts will arrive. The 70-year-old from Issaquah, Wash., drives the Avalon anyway–as do most Americans with Takata-equipped vehicles.

As millions of drivers sit and wait, there's growing criticism about the time it's taking to address a problem Takata has known about since 2004. The chemical propellant in the bags' inflators can deploy too forcefully, blowing up the casing and hurling shrapnel at occupants. Eight have been killed and scores injured. So far the U.S. has ordered a dozen automakers to replace Takata air bags in 19 million vehicles, and the National Highway Traffic Safety Administration says that won't be completed until 2019. Regulators say they may add millions of cars to the recall.

"Waiting four years for replacement parts is too long," says Clarence Ditlow, executive director of the nonprofit Center for Auto Safety. "NHTSA should order manufacturers to step up production and get it done in two years."

But this recall is more complex than most, says Sean Kane, president and founder of Safety Research & Strategies, which examines product hazards. "It involves multiple manufacturers and a variety of both cars and air bags," he says. "Plus, manufacturers allowed it to grow exponentially rather than solve it when they first investigated it."

The air bag inflator, a triggering mechanism, costs just $15 for a driver's side and $60 for a passenger-side bag. But engineers at the companies hired to make replacement parts need up to a year to design and engineer machinery to produce parts that reflect individual models' unique characteristics, such as distance between seat and steering wheel, says Scott Upham, a former Takata marketing executive who's president at Valient Market Research.

After a slow ramp-up, NHTSA in October said Takata and other suppliers were making replacement inflators at a rate of 2.8 million a month. NHTSA Administrator Mark Rosekind said then that regulators will decide ▶

MOVIE DATA: BOX OFFICE MOJO; DRUG DATA: DRX. DATA: NHTSA, COMPANY REPORTS. BLOOMBERG.

by Thanksgiving whether and how to push the rate higher. **Honda** says it's replaced 41 percent of bags under the recall, while **Toyota** says it's repaired 27 percent of affected cars in states with high humidity, which can destabilize the bags' propellant. (Toyota hasn't disclosed national figures.) **Fiat Chrysler Automobiles** says its national completion rate is 7.5 percent.

Takata switched to ammonium nitrate as its propellant in 2001. In 2008, Honda—its biggest customer—announced its first Takata-related recall; 43 more by Honda and other carmakers followed. Even so, from at least 2009 until 2014, Takata gave NHTSA and its own customers "selective, incomplete, or inaccurate information" about the risks, NHTSA says. "I have to say, this has been a mess," says U.S. Secretary of Transportation Anthony Foxx. On Nov. 3, Takata and NHTSA announced Takata would phase out ammonium nitrate and be fined up to $200 million.

NHTSA is coordinating efforts by Takata and other parts makers, including **Daicel**, **Autoliv**, and **TRW Automotive**, to produce replacements, pushing them to first serve dealers in the South, where humidity is higher. "Honda has an adequate supply to meet the pace of customers responding to the current recalls," says spokesman Matt Sloustcher. "We continue to expand the supply." Toyota has sufficient inflators for high-humidity states, spokeswoman Cindy Knight says, and will schedule appointments for customers in other states as parts become available. "We have taken, and continue to take, proactive steps to increase recall-completion rates," a Takata spokesman said in an e-mail.

Honda on Nov. 3 said it won't renew its air bag contract with Takata, a move Chairman Shigehisa Takada says could threaten Takata's existence. Toyota, **Nissan**, and **Mazda** also stopped using its bags. Takata's share of the global air bag market could fall to 5 percent by 2020, from 22 percent now, figures Upham. Air bags account for about a third of its $5.2 billion in annual sales.

"This recall is a disaster for consumers," says Robert Ammons, a Houston attorney whose clients include drivers with Takata air bags. "And I don't think Honda or Toyota did anybody any favors announcing they'll no longer buy components from Takata. It could help their public relations, but it could be the hammer that puts Takata under, and then people may never get their air bags fixed."
—*John Lippert, with Margaret Cronin Fisk and Jeff Plungis*

The bottom line It may take four years to replace Takata air bags in 19 million cars that were recalled in the U.S. And regulators may recall millions more.

Freight

Giving a New Meaning To Flying Cattle Class

▶ **Cows are shipped via 747s to satisfy China's hunger for beef**

▶ **"Sending them in by sea ... limits you ... to the coastal areas"**

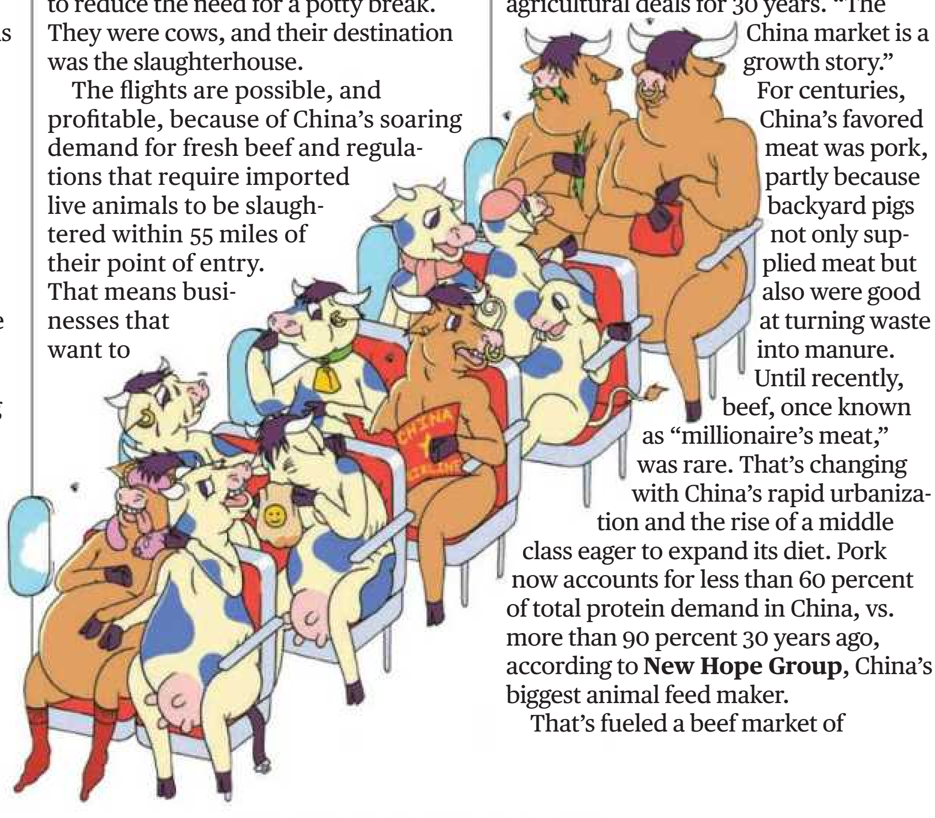
Next time you're stuck on a long-haul flight in a packed economy class cabin being ignored by a frazzled flight attendant, spare a thought for the 150 passengers on a recent flight from Melbourne to Chongqing in southwest China. Their seats on the main deck of a Boeing 747 were actually shipping crates, they didn't get free movies, and in-flight meals were sharply restricted to reduce the need for a potty break. They were cows, and their destination was the slaughterhouse.

The flights are possible, and profitable, because of China's soaring demand for fresh beef and regulations that require imported live animals to be slaughtered within 55 miles of their point of entry. That means businesses that want to market fresh steaks to such booming interior cities as Chongqing, about 1,000 miles west of the East China Sea coast, need a big plane.

"Airfreight does provide the opportunity to get cattle into inland areas," says Cameron Hall, general manager for live exports at **Elders**, the Adelaide (Australia)-based rural services company that managed the first cow lift on Oct. 20. "If you're sending them in by sea, then that limits you very much to the coastal areas."

The rationale for the bovine flights is simple. The Chinese, who today consume 8 million tons of beef annually, will eat an extra 2.2 million tons a year by 2025, according to Rabobank. (That's enough to make 19 billion Quarter Pounders.) Growing demand has boosted Chinese beef prices fourfold since 2000 to about $10 a kilogram ($4.54 a pound) in June—more than double Australia's benchmark rate.

So, just months after the two countries sealed a free-trade agreement covering everything from cows to coal, Australian livestock agents and exporters have been busy chartering aircraft, seeking out quarantine sites, and designing bigger animal transport ships. "It's a massive opportunity," says David Williams, managing director of Melbourne-based advisory firm **Kidder Williams**, who has brokered agricultural deals for 30 years. "The China market is a growth story."



For centuries, China's favored meat was pork, partly because backyard pigs not only supplied meat but also were good at turning waste into manure. Until recently, beef, once known as "millionaire's meat," was rare. That's changing with China's rapid urbanization and the rise of a middle class eager to expand its diet. Pork now accounts for less than 60 percent of total protein demand in China, vs. more than 90 percent 30 years ago, according to **New Hope Group**, China's biggest animal feed maker.

That's fueled a beef market of

ILLUSTRATION BY PETE SHARP; RIGHT FROM TOP: COURTESY POLARIS; JASON ALDEN/BLOOMBERG

$60 billion a year. And in China, almost all of the cow is used. "The offal and the bones and all that product is used in a manner that is even beyond our imagination," says Scot Braithwaite, chief operating officer of Aussie livestock exporter **Wellard Group**. "The bones get one use, to be boiled and used for soups, and they dry it out and use it again as a basis for Chinese medicine."

Consumers in China will pay more than in other markets for top-grade beef when they're certain it's been reared in Australia, says Braithwaite. The chance to buy the animal's internal organs, fresh from the slaughterhouse, also drives up the price.

The added value is likely to encourage Australian suppliers to fly lots more Australian cows to their final resting places in China. On the inaugural flight, Angus and Hereford cattle were packed onto the aircraft's main deck—where economy class flyers are normally squeezed—in crates of four or five, Hall says. The upper deck, where business class passengers sip Champagne on a regular flight, had room for a few human escorts.

The cows were given limited food and water before the trip to reduce the mess they'd make during shipment. What they did excrete during the 13-hour flight was soaked up by absorbent mats, which were destroyed at the destination. Once in China, the cow crates were lifted onto trucks with a crane and taken to a quarantine area.

China and Australia in August agreed on health rules governing shipments of live cattle, clearing the way for the maiden voyage. Even so, animal rights groups are concerned about the stress animals might suffer on long flights from Down Under. "There are still glaring animal welfare issues ahead for all future exported animals," the Royal Society for the Prevention of Cruelty to Animals in Australia said in an e-mailed statement. "The Australian government is best to instead focus on the chilled and frozen beef industry rather than putting the welfare of more Australian animals at risk by sending live cattle to China." —*Angus Whitley*

The bottom line The price of beef in China is more than double the cost in Australia. So agricultural companies are flying in cows from Down Under.

Edited by James E. Ellis
Bloomberg.com

Briefs

By Kyle Stock

The Pizza Hedge

Clothier *Urban Outfitters* paid about $20 million to buy a chain of six pizza restaurants, in a bid to draw foot traffic to its retro T-shirts and ironic cassette players. It plans to open three additional in-store pizzerias next year. The company's shares, which have lost half their value since March, slid further on the news. *Dick's Sporting Goods* slashed its financial forecast and said it would cancel or return some inventory orders heading into the holiday season. The company said an unseasonably warm autumn chilled demand for its apparel, though its golf business showed improvement. Dick's warned its holiday margins would be crimped by aggressive price cuts at rival retailers. *Dunkin' Donuts* began taking orders via smartphone in Portland, Maine, and testing delivery service in Dallas, in a bid to keep pace with Starbucks. The company's stock took a hit last month when it forecast profit below estimates. Its breakfast business is also getting nibbled at by McDonald's all-day eggs. *Angie's List* rejected an unsolicited $512 million cash offer by Match.com owner IAC/InterActiveCorp, saying it undervalued the company. Although it has long struggled to turn a profit, Angie's List says it's developing a cost-cutting plan. *Comcast* dropped the YES Network, the broadcaster of New York Yankees and Brooklyn Nets games, after the two sides failed to reach a new agreement. Comcast said the YES price demands weren't justified by its ratings. In turn, YES said Comcast's decision marked a "new low" in customer service for the cable operator.

Polaris Industries unveiled what it calls the Escalade of all-terrain vehicles, a four-wheeler selling for $16,000 to $19,900. ATV demand is hotter than that for motorcycles or cars.

The war chest that **Earnest**, a student loan startup, raised from VC investors to expand its financial services. It plans to grant $1.5 billion in loans in the next 12 months, mainly to consumers not served by existing lenders.

$275 million

CEO Wisdom

"BMW is like Park Lane or Mayfair on [British] Monopoly. They can have what they want. We're the boutique; we can have cool vehicles with good designs."
—Ralf Spaeth, CEO, Jaguar Land Rover, on the risk of chasing revenue at the expense of profit

Corn and soybean farmer J. Gordon Bidner

One of Bidner's soybean fields in McLean County, Ill., on Oct. 12

Reaping What They Sowed

▶ **This year, new crop payment programs will cost taxpayers more than the old flat subsidies**

▶ **"Farm bills are written for the bad years, not the good ones"**

In October, 1.7 million U.S. farmers got their first payouts under flexible subsidies created by Congress in 2014 to replace a system of fixed support. A crash in commodity prices means the program—which gives farmers three choices with different risks and rewards—will pay out about $1 billion more than anticipated. "Farm bills are written for the bad years, not the good ones," says Dale Moore, public policy director for the American Farm Bureau Federation. While some got more than they would have under the old system, Illinois farmer J. Gordon Bidner was among those who got no federal cash for their crops, thanks to a healthy corn harvest. "We are all about managing and minimizing risks," he says. —*Alan Bjerga* ▶

PHOTOGRAPHS BY RYAN LOWRY FOR BLOOMBERG BUSINESSWEEK

The Choices

Farmers have three options. Two guarantee revenue in bad harvest years, while the third provides a cushion when prices fall. The catch: Farmers are stuck with their choices until 2018, when the Farm Bill comes up for renewal—no matter how markets or nature behave.

96%
of soybean farms

91%
of corn farms

66%
of wheat farms

99%
of long-grain rice and peanut farms

ARC-CO
Agricultural Risk Coverage (County) insures farmers' revenue based on countywide yields for specific crops, such as corn, soy, or wheat.

76%
of all U.S. farm acres are enrolled in ARC-CO.

PLC
Price Loss Coverage offers farmers price support for their commodity crops.

23%
of all farm acres are covered by PLC.

ARC-IC
Agricultural Risk Coverage (Individual) provides revenue protection based on a farmer's own harvest history.

1%
are enrolled in ARC-IC.

The U.S. Department of Agriculture rates farms nationwide based on a soil analysis: Bidner's Baum Farm is a Class A farm with a productivity index of

138.4

while the Home Farm is rated

126.1

Bidner's Result

Bidner chose ARC-CO and got

$0

in October for his 2014 crop, because it outperformed previous harvests, thanks to the end of a brief drought.

Under the earlier, fixed subsidy program, Bidner received $8,000 a year.

Baum and Home are two of six farms Bidner's family runs in McLean County.

The first two weeks in July determine how plants will grow through the rest of the season.

Factors such as soil quality, drainage, and microclimates affect yields.

Crop Report

Bidner's records for his cornfields for the past 10 years show how rainfall and crop yields can vary from year to year.

Year	Planting date		McLean rainfall		Yield in bushels	
	Baum Farm	Home Farm	Growing season	July 1-11	Baum Farm	Home Farm
2006	4/27	5/28	16.39"	2.01"	203.4	151.4
2007	5/7	5/3	11.57"	0.44"	199.6	177.8
2008	5/6	5/7	21.89"	0.86"	256.4	191.8
2009	5/12	5/21	22.56"	0.46"	205.5	180.0
2010	4/15	4/19	22.78"	0.59"	219.3	190.4
2011	5/5	5/11	16.77"	0.10"	220.1	205.4
2012	4/23	4/23	15.36"	zero	199.0	122.8
2013	5/15	5/15	23.37"	0.12"	224.3	196.8
2014	4/22	4/26	24.58"	0.6"	272.3	227.7
2015	4/23	5/1	31.18"	4.52"	200.1	156.4

With ARC, payments are calculated using a five-year Olympic average—which throws out the top and bottom results.

This year, Bidner saw unusually high rainfall in early July.

2014 yields were his best in the past decade.

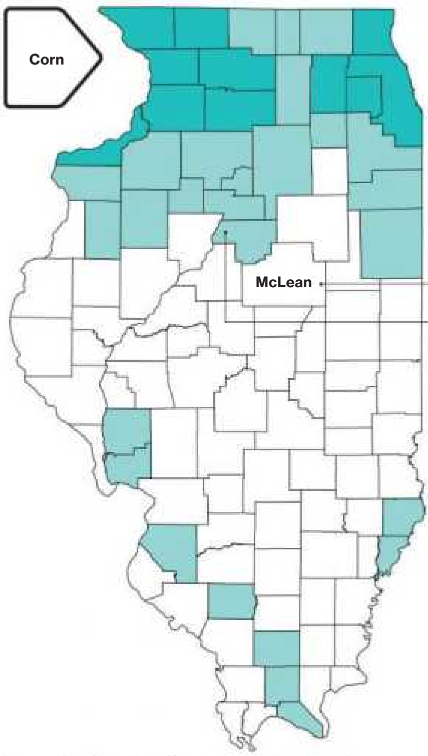
PHOTOGRAPHS BY RYAN LOWRY FOR BLOOMBERG BUSINESSWEEK

Bidner's Neighbors

Payouts under the ARC-CO program can vary, even between adjacent counties. Northern Illinois received more rain in 2014 than the south, decreasing yields—so farmers there got federal support, while Bidner didn't need it.

Payouts
Revenue below historical average
80%-90% | 90%-100%

No Payouts
Revenue above historical average
100%-125% | Over 125%



For the 2014 harvest, revenue for corn farmers in McLean was
103.1%
of the 2009-13 average.

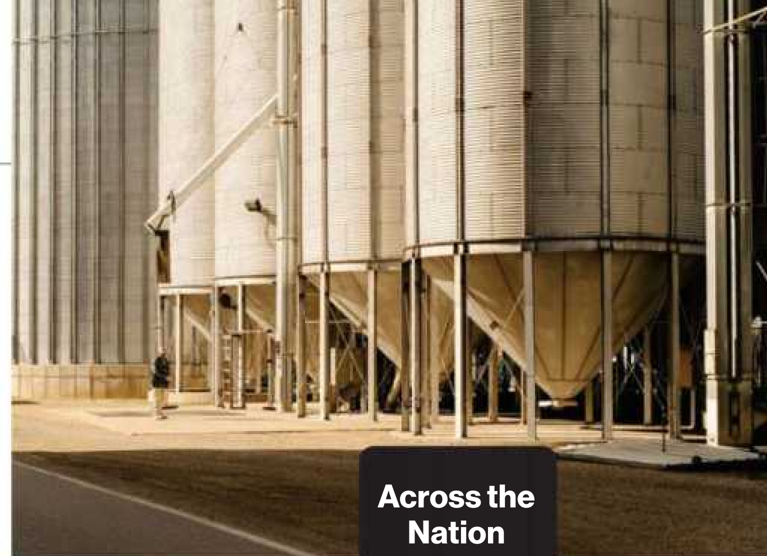
Next door, in Woodford County, farmers took in only
97%
of their average revenue and got a subsidy of $25.09 per base acre under ARC-CO.

DuPage County's 2014 soybean crop revenue was
89.9%
worse than the historical average.

McLean County's revenue came in at
109.6%
of the historical average.

Revenue in Richland County was
142.2%
of the average, the highest in the state.

2015 yields were down



Across the Nation

The Congressional Budget Office predicted in March that the new subsidy system would cost
$4.02b
in 2015 and peak at
$7.25b
in 2016. Instead, government support is expected to reach
$5b
this year, in part because a glut in commodities is keeping prices low—which means payouts are high.

"The estimates were overly optimistic," says Vincent Smith, a professor of agricultural economics at Montana State University in Bozeman. "Some farmers will receive hundreds of thousands of dollars."

So far, Bidner has sold
56%
of his corn crop and
40%
of his soybeans. That's far below his usual sales target of 75 percent at this point in the season. He's keeping it off the market in hopes that prices—$3.68¼ per bushel for corn and $8.57¾ per bushel for soybeans as of Nov. 18—will go up before the next harvest.

MARKET DATA BY JEFF WILSON

"If corn gets to $3.90 a bushel, you'll see it coming onto the market. At $4 a bushel, a lot of it will come onto the market. People are really holding on to it."

Public Opinion

The Polling Industry Cuts the Cord

▶ **SurveyMonkey takes over Gallup's turf with online polls**

▶ **"The field has had a significant change of attitude about this"**

Before he died in May, **SurveyMonkey** Chief Executive Officer Dave Goldberg was laying plans to make his company more than just a generator of do-it-yourself questionnaires. He wanted to expand into market research. In his mind, there was one way to achieve credibility when it came to measuring public opinion: calling elections. In 2014 he hired Jon Cohen, a former *Washington Post* pollster, to develop voter surveys. The company's polls accurately predicted the results of all 36 U.S. Senate races in the midterms.

Goldberg and Cohen decided to make a big public push before the 2016 elections in the U.S. and chose to focus on this year's parliamentary election in the U.K., widely expected to be a close contest. Goldberg died on a Friday, after falling from a treadmill while on vacation in Mexico, less than a week before the May 7 vote. On Monday his colleagues returned to work to find that their online polling data indicated David Cameron's Conservative Party would win a decisive majority. Almost all the other polls suggested the result of the vote would be a virtual tie between the Conservatives and their Labour rivals. The team had to decide quickly whether to publish. "We were dressed in black from the memorial, and we said, 'Do we do this? We do run a risk if we're wrong,'" says Bennett Porter, SurveyMonkey's head of marketing. "But we knew that we weren't. And we knew that Dave would've wanted us to do it."

The bet paid off. SurveyMonkey, which published its results in the *Washington Post*, came closer than other public polls to mirroring the results of the election, which gave Cameron a sizable majority. The company has since conducted online polls on behalf of the *Los Angeles Times* and NBC News. In October, SurveyMonkey announced it was hiring Mark Blumenthal, a Democratic pollster who created the popular pollster.com blog, now owned by the *Huffington Post*. "The great thing about polling [elections] is there's an answer—you can tell whether you were right or not," says Tim Maly, SurveyMonkey's chief financial officer. "It's the gold standard for evaluating your capabilities."

Established operations that rely on telephone surveys have backed away from horse-race polling, which has grown steadily less reliable as people become harder to reach by phone. Response rates have fallen to less than 10 percent, from more than 80 percent in the 1970s. In October, **Gallup**, which wrongly predicted that Romney would narrowly win the popular vote in 2012, announced it wouldn't ask which candidate voters would choose in the 2016 presidential primaries. Instead, Gallup Editor-in-Chief Frank Newport says the organization will focus on surveying public opinion on specific issues. The Pew Research Center has also refocused its polling on issues rather than on voters' candidate preferences.

Instead of cold-calling respondents, SurveyMonkey randomly chooses people who are already filling out surveys—such as one Cohen recently sent his family asking about their preferred Thanksgiving sides—to take part in its political polls. The company, which says its site attracts about 3 million visitors daily, includes questions about age, race, gender, and education. Just as in a telephone poll, Cohen's team weights responses to mirror the general voting population. "One can effectively deliver telephone surveys today, but to do it well is extraordinarily expensive," Cohen says. "The reality is that people are responding to surveys. We need to meet people where they are."

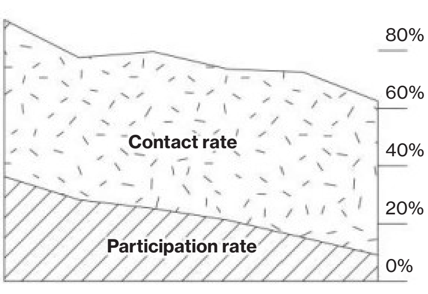
Polling experts say SurveyMonkey's approach risks oversampling the young and wealthy, who are most likely to be responding to its Web questionnaires, and undersampling older people who are statistically most likely to vote. "Online nonprobability surveys have serious problems, and I believe them to be inferior to well-done traditional telephone polls," says Cliff Zukin, a professor of public policy and political science at Rutgers University. Jonathan Mellon, a research fellow at the University of Oxford who studies polling methodology, says: "We don't know if they're doing something different and it will consistently lead to the right results, or if it's doing something different and it will just systematically have different results than everyone else, which sometimes might be better and sometimes might be worse."

But as the way people use technology changes, some pollsters may have no choice except to explore new ways of reaching out, says Scott Keeter, director of survey research at Pew. "The field has had a significant change of attitude about this, from one of 'No way' to 'Well, let's take a look.'" —*Tim Higgins*

The bottom line As traditional telephone polling becomes less reliable, SurveyMonkey steps in before the presidential election.

Do Not Disturb

Fewer people answer their phones, and they won't talk to pollsters when they do



DATA: PEW RESEARCH

Campaign Donors

An Obama Backer Faces Trial for BP Fraud

▶ **Mikal Watts has ties to potential Clinton running mate Julián Castro**

▶ **Watts "has made himself an influential person in South Texas"**

In late October, U.S. prosecutors in Mississippi unsealed a 95-count indictment charging attorney Mikal Watts, his brother, and five others with conspiracy, fraud, and identity theft. According to the indictment,

Quoted

"We're living in a really negative time. But I think we can fix that."

Republican presidential candidate **Jeb Bush**, in a Nov. 17 interview with Bloomberg Politics

Watts filed about 40,000 phony damages claims against **BP** in the wake of the April 2010 Deepwater Horizon oil spill in the Gulf of Mexico. Working through another attorney, Watts paid a total of more than $10 million for some of the names and identities "to be used as clients" in suits against BP, prosecutors said. Among the fake claims was one filed in January 2013 for $45,930 on behalf of one "Lucy Lu," who turned out to be a dog, not a person.

Since the 1990s, Watts has won fame and fortune pursuing suits against such defendants as **Firestone** and **Ford**. His trial in the oil-spill case is scheduled to begin on Dec. 7. Watts's attorney, Robert McDuff, says his client and other defendants are innocent. "Obviously, fraud was committed somewhere down the line by others," McDuff said in a statement after the indictment. "But as the evidence at trial will show, there was no fraud on the part of Mikal Watts or the people who work in his office." He declined to comment further for this article.

$45.9 thousand

Value of false BP claim filed on behalf of Lucy Lu, who clearly excelled at fetch

Beyond its implications for the continuing controversy surrounding the BP spill, the Watts prosecution could draw unwelcome attention to his role as a Democratic political contributor in South Texas. Watts, 48, who's given millions to Democratic candidates and affiliated groups over the years, was one of Barack Obama's bundlers in 2008. In July 2012 the president attended a $35,800-a-person fundraiser at **Watts's home**, held in his state-of-the-art gymnasium, a location selected "because of the president's love of basketball," Watts told *San Antonio Magazine* at the time. Ready for Hillary, a pro-Clinton political action committee, was the beneficiary of a November 2013 fundraiser at Watts's San Antonio office, according to the *San Antonio Express-News*. "Mr. Watts has made himself an influential person in South Texas and nationally by consistently raising and giving money to Democratic candidates," says Robert Stovall, chairman of the Bexar County Republican Party.

SUSAN WALSH/AP PHOTO

Watts has also enjoyed a long-standing connection with former San Antonio Mayor Julián Castro, now Obama's secretary of housing and urban development, who's widely considered to be among those short-listed by the Clinton campaign as a potential running mate. As the Watts trial date approaches, Republicans are trying to cast the defendant's relationship with Castro in a bad light. "Prominent Clinton backer Julián Castro received a suspect 'referral fee' from Watts," the Republican National Committee's dedicated anti-Clinton blog noted recently.

In 2009, Trish DeBerry-Mejia, a political rival, criticized Castro for accepting a referral fee that the *Express-News* reported was worth $1 million from Watts in a case stemming from a fatal car crash. The case began with a Christmas 2006 accident in which three members of a single San Antonio family lost their lives. Relatives of the victims hired Castro, who directed the case to Watts's high-powered law firm. The suit was settled the following year on confidential terms, and a judge sealed the court records. "What kind of influence is Mr. Watts trying to buy?" DeBerry-Mejia asked during a March 2009 interview with the *Express-News*. "Mr. Castro professes to be a man of the people, but how many people have seven-figure referrals dropped in their laps?" DeBerry-Mejia, who lost to Castro in that year's race for San Antonio mayor, declined to comment for this article.

At the time, Castro called the questions a "misguided" attempt by political opponents "to smear my reputation." In Texas, attorneys may refer cases to fellow members of the bar as long as they retain responsibility for the clients and do at least some of the legal work. A Harvard Law School graduate, Castro said he participated actively in the crash case even after he referred it to Watts. "I'm proud of the work that both firms did," he told the *Express-News*. Watts said at the time: "I don't think politics had anything to do with it. People know that I'll go to trial, and that leads to a maximum value in cases." Brian Sullivan, a spokesman at the Department of Housing and Urban Development, declined comment on Castro's behalf.

"This is old-style politics that's plagued Bexar County and South Texas for as long as anyone can remember," Stovall says. "This is going to be a continued cloud over Castro's head."
—*Paul M. Barrett*

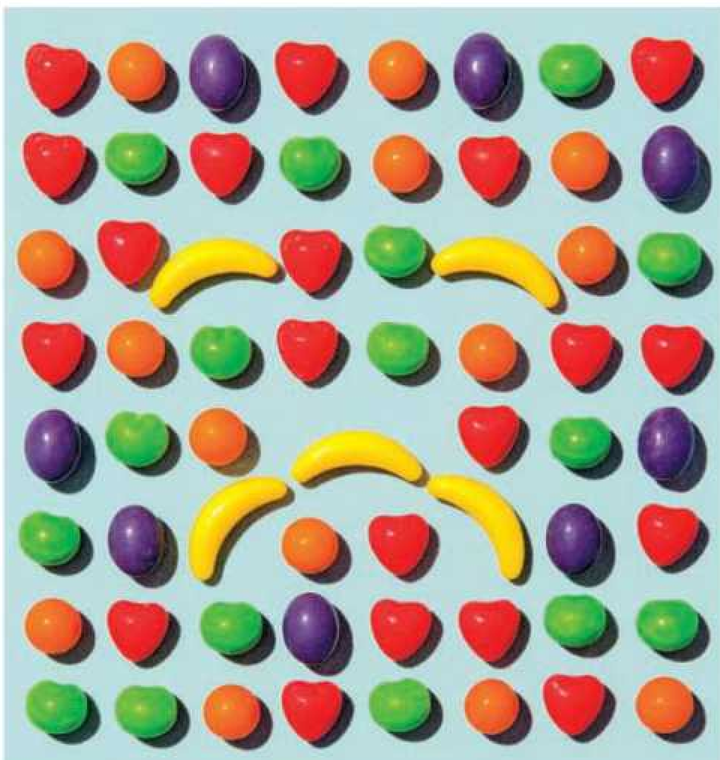
The bottom line A Texas lawyer who was an Obama fundraiser faces trial over allegations of phony damages claims in the BP oil spill.

Edited by Allison Hoffman
Bloomberg.com

The Mobile Candy Is Turning a Bit Sour

▶ **Smartphone game maker Kabam is struggling to crank out its next megahit**

▶ **"Nobody knows what the formula looks like"**



PHOTOGRAPH BY 731

A year ago, Kevin Chou decided against an initial public offering for his company, **Kabam**, which makes smartphone games based on popular Hollywood franchises. Instead, the chief executive officer opted to let employees and early investors sell $40 million worth of stock to investors, a move that didn't subject Kabam's finances to public scrutiny on a quarterly basis. "We've kind of taken the need for an IPO off the table," says Chou. It was the second time Kabam had done that in two years.

When a startup that's considered going public decides not to, it's generally seen as a defeat. But Chou got some validation on Nov. 2, when **Activision Blizzard** bought **King Digital Entertainment**, the maker of Candy Crush, for $5.9 billion. While that's a lot of money, it's $1.2 billion less than King's 2014 IPO value. The Activision deal was a reminder of both how big mobile game companies can become and how vulnerable they remain.

King is one of the giants of mobile gaming. Almost 500 million people play Candy Crush and related titles, and King has made well over $100 million in profit in each quarter since its IPO. Investors got nervous, though, as the company failed to produce a comparably popular follow-up. Earlier casual-gaming leaders such as **Zynga** and **Rovio** have seen their fortunes fall.

Mobile gaming has proven lucrative, but that doesn't mean making lucrative games is easy. Enduring success in the industry requires a steady string of games that reach blockbuster status. "Nobody knows what the formula looks like," says Chou.

For more than six years, Kabam has ridden the waves of the game business. Chou and two co-founders started the company in 2006 as Watercooler, a social network focused on sports. They later switched to developing games for Facebook, then their own site, and eventually shifted their focus to mobile. Kabam's revenue reached $400 million last year, and the company says it's been profitable since 2012. Its latest big game is Marvel: Contest of Champions, which sets up fights between superheroes such as Spider-Man and Thor. The game made $100 million within seven months of its December launch and has consistently ranked among the 10 top-grossing iOS games, says researcher App Annie.

Licensing popular characters has helped Kabam stand out in a field of hundreds of thousands of games. It's also forced the company to share revenue with rights holders. And hit movies don't always make for hit games. Kabam's recent adaptations of *The Lord of the Rings* and *The Hunger Games* never brought in much money, and Kabam's overall revenue grew only 7 percent in 2014 after doubling the year before. The company declined to provide more recent data.

In April, Kabam began to lay off an undisclosed number of its 825 employees. Since then the company has shifted away from publishing other developers' games, ditched its Web division, and cut the number of titles in development from dozens to just a few. Chief Operating Officer Kent Wakeford says Kabam is no longer interested in making a bevy of marginally profitable games and wants to concentrate its efforts. "It's riskier if we're going to launch two to four games a year," he ▶

◀ says. "But do you want 20 games that make $1 million a month or one game that does $100 million a month?"

Kabam is also betting big on China, which surpassed the U.S. this year as the biggest market for mobile games—about 420 million people there pay $5.5 billion annually, says researcher Niko Partners. Western gaming companies typically haven't done well in China, where tastes differ and local gatekeepers dominate access to the market. Kabam, however, has closer ties to China than most rivals do. Chou and his two co-founders are the children of Chinese immigrants, and the company has had a studio in the country for five years. Alibaba invested $120 million in Kabam in July 2014, a deal that valued the company at more than $1 billion.

Early next year, Kabam plans to launch a version of Marvel: Contest of Champions tailored for China. Although Kabam has experimented unsuccessfully with Chinese iterations of its games in the past, it's invested considerably more time and effort this time. Chou says the company paid Marvel parent **Walt Disney** more to license the characters for use in China than it did for the U.S. version, and it's dedicated 200 people to localizing the game.

Some of the changes are relatively simple, such as reworking the user interface to accommodate text that can be read from top to bottom rather than left to right. The Chinese version will also offer more virtual gear, such as dragons and special weapons, that can be earned through hours of play or bought with real money. Chinese government censorship is also a factor: Games in China can't show blood unless it's given an unrealistic color, and resurrection is off-limits.

Success in China could raise Contest of Champions into the top stratum of mobile games. Yet even that wouldn't prove Kabam, or any company that just makes mobile games, can survive on its own, says Santosh Rao, head of research at Manhattan Venture Partners. After Activision bought King, Rao sent a research note to investors saying the industry is ripe for consolidation. In an interview, he says Kabam's success could make it an acquisition target, and selling out would help the company survive between hits.

Like Chou, Rao says it's a good thing Kabam didn't push for an IPO. "It would have been a disaster," he says. "This is a very spotty business. You're only as good as your last game." —*Joshua Brustein*

The bottom line Kabam's revenue reached $400 million last year, but like most mobile game makers, it's struggling to build a catalog of hits.

E-Commerce

New York Gambles on A Daily Fantasy Ban

▶ **FanDuel and DraftKings are fighting the state AG's standard**

▶ **"If he wins and looks good doing it, other states will follow"**

New York Attorney General Eric Schneiderman took the most aggressive legal action yet against daily fantasy sports on Nov. 11, when he sent a cease-and-desist order to **FanDuel** and **DraftKings**, the billion-dollar startups that dominate the market. His argument is that the contests aren't games of skill, the key test many states use to judge whether an activity should be considered gambling and therefore illegal. Shortly thereafter, Schneiderman filed a lawsuit to shut down both companies' New York operations. FanDuel has stopped its in-state business ahead of a Nov. 25 hearing; DraftKings continues to operate, saying it likes its chances in court.

"It is these types of harms that our constitution and gambling laws were intended to prevent." —*Eric Schneiderman, New York attorney general*

Daily fantasy sports businesses claim they're legal because of an exemption for fantasy sports in the federal Unlawful Internet Gambling Enforcement Act of 2006, which broadly defined their competitions as games of skill. But that law defers to states on what counts as betting. If courts back Schneiderman's view that "numerous elements of chance to a 'material degree'" are involved, there could be a cascade effect.

"If he wins and looks good doing it, other states will follow," says Jeremy Levine, founder and chief executive of **Draft**, a smaller daily fantasy company that stopped operating in New York after Schneiderman's letters. Asked what that would mean for the daily fantasy sports, he's blunt: "It's the end."

States have different thresholds for how much chance can mix in with skill before something is gambling. For Schneiderman, season-long fantasy sports pass muster partly because they can involve months of strategy, whereas daily fantasy can turn on a single play. New York's standard is in the middle of the pack, says Daniel Wallach, a sports and gaming attorney with the firm Becker & Poliakoff. About 10 states say

Hardware Inside Samsung's Creative Lab

About 30 miles south of Seoul, in Samsung's Suwon headquarters, 350 workers are tinkering with 100 projects in the so-called Creative Lab. Each gets at least a year away from his or her day job and has the option to spin off the project as an independent business, says Lee Jai Il, head of Samsung's Creativity & Innovation Center, which oversees the effort. The Creative Lab projects, drawn from about 1,100 applications submitted last year, are focused mostly on Samsung's longer-term goals of improving its software and selling a wider range of Internet-connected devices. "Instead of looking far into the future, every division is more engrossed in moneymaking," Lee says. —*Jungah Lee*

TipTalk

What A wristband that transmits incoming smartphone calls. You talk into the band and listen through a fingertip.

Who Choi Hyun Chul, 32, devised the band to help those who want to prevent eavesdropping in public without using headphones.

Status Spun off as five-employee Innomdle Lab in September. Innomdle says it's trying to bring the wristband to market by yearend.

CLOCKWISE FROM TOP: ILLUSTRATION BY 731; JUNG JAEHO/SOCIALNETCREATOR; YU YE EUN/CHEIL WORLDWIDE; COURTESY SAMSUNG; SEONGJOON CHO/BLOOMBERG games involving any chance count as gambling, while about 20 say so only if luck is the "predominant factor" in the outcome, Wallach says.

At the same time that Schneiderman likens daily fantasy to the lottery, he complains a small number of top players win almost all the time. His letter doesn't accuse anyone of cheating, which seems like a tacit acknowledgment that some players are better.

FanDuel and DraftKings describe daily fantasy as skill-based games, but they've regularly disputed claims that elite players win most of the time, afraid of discouraging more entrants. When *SportsBusiness Journal* published a report this summer showing that 1.3 percent of players collected 91 percent of profits during the first half of baseball season, both companies contested the findings. Yet DraftKings cites that same study in a Nov. 13 court filing as evidence of skill.

DraftKings argues that New York courts have previously used the standard that luck has to be the "dominating element" in a game before it's seen as gambling, a higher bar to clear than Schneiderman's "material" standard. But another way governments determine whether an activity should be considered legal is the "gambling instinct" test, which says things that feel like gambling are gambling. For example, poker requires skill, but it's banned in the U.S. outside of casinos.

Schneiderman's cease-and-desist order compares daily fantasy to poker. Potential problem gamblers are likely to be lured in by "the quick rate of play, the large jackpots, and the false perception that it is eminently winnable," he wrote. "It is these types of harms that our constitution and gambling laws were intended to prevent in New York."

After avoiding scrutiny for the past few weeks, a third major daily fantasy operator, Yahoo!, has been subpoenaed by Schneiderman's office, according to a person familiar with the matter. Yahoo says its games are legal and, for now, will continue to take entries in New York. —*Joshua Brustein*

The bottom line Schneiderman's "material" standard for chance as a factor in daily fantasy sports could lead other states to ban the industry.

Biotech

What Consumer Gene Testing Can't Do

▶ **The FDA is questioning how DNA kits are marketed**

▶ **"Almost all of this is premature and not terribly useful"**

DNA4Life sells a $249 test to people who want to know whether their genes put them at risk of bad reactions to about 100 common medicines. **Interleukin Genetics** sells a $169 test that the company says "may help you lose more weight by properly matching diet and exercise plans" to genetic profiles. **DNA-CardioCheck** bills its $450 test as a "reliable method to determine whether or not you might be at risk for developing blood clots which might result in cardiovascular disease."

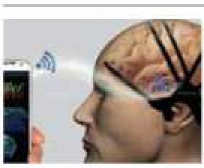
All three got letters from the U.S. Food and Drug Administration in early November suggesting they may not have proper clearance to sell their tests to consumers. It's the latest sign that regulators are concerned about how companies market DNA tests for health insights, sometimes bypassing doctors entirely. There's good reason for that worry: For many people, the genetic analysis available today doesn't provide much meaningful health information.

DNA tests can reliably establish family ties, like paternity tests, or reveal a person's ethnic heritage. They can also tell whether people have certain rare diseases such as cystic fibrosis that are directly linked to genetic mutations or whether they're at risk of passing such genes on to their children. For much information relevant to people's health, especially the likelihood of conditions such as heart disease or diabetes, the value of genetics becomes much murkier.

"Right now, almost all of this is premature and not terribly useful to individuals," says George Annas, a Boston University bioethics professor and coauthor of *Genomic Messages*. "It's complicated, and these testing companies are trying to make it appear that it's much more simplistic so they can sell you a product."

The FDA hasn't told DNA4Life, Interleukin, or DNA-CardioCheck to stop selling their kits, but the agency's letters said it considers them medical devices that need regulatory clearance and asked for evidence to the contrary. "The FDA actively regulates ▶

Stroke Warning



What A sensor that, when placed in a hat, collects brain wave data and wirelessly sends it to a mobile app, which analyzes the data to predict the onset of a stroke.

Who Lim Se Hoon, 36, heads a five-person team.

Status Samsung's chips division is overseeing the project and plans to bring it to market, but it wouldn't say when.

Jamit

What A collection of sensors placed on the bridge of a violin that uses Bluetooth to send the player's performance data to a tablet app. The app points out wrong notes and advises on playing posture.

Who Jeon Dae Young, 40, developed the tool to help his daughter learn the violin without paying for lessons.

Status Jeon says his four-person team is considering spinning off as its own company in December.

IoFit

What A shoe sensor that monitors the foot's pressure and position to help correct a wearer's posture and stride.

Who Cho Hyung Jin, 30, began working on the sensor when one of the other six engineers on his team developed a backache linked to posture.

Status Spun off as Salted Venture in September, with plans to commercialize the technology by next summer.

◀ genetic tests sold directly to consumers to make sure they are safe and do what they claim to do," spokeswoman Jennifer Dooren said in an e-mail. "Without FDA oversight, the safety and efficacy of these tests have not been determined."

DNA4Life and DNA-CardioCheck didn't respond to requests for comment. Interleukin Chief Executive Officer Mark Carbeau says his main test, which predicts gum disease risk, is sold primarily through dentists. Other products "can be purchased by a consumer, though a medical professional needs to be involved," he says. "Properly done, genetic tests offer real value to the health-care community, and we're certainly supportive of the FDA's efforts to protect the public."

In 2012, Booz Allen Hamilton estimated there were almost 3,000 genetic tests on the market, many sold directly to consumers. Market researcher Technavio says the billion-dollar industry is growing almost 10 percent a year. In 2013 the FDA ordered **23andMe** to stop selling its personal genome analysis. In February the agency approved 23andMe's test for a limited use—to detect whether people carried the gene for Bloom syndrome, a rare genetic disorder. The company has since added other approved uses to determine if people carry inheritable mutations.

For most common diseases, though, genes are only some of many complex risk factors, including environment and lifestyle. While a single gene mutation can cause cystic fibrosis, "for things like cardiovascular disease that's just not true," says Michael Christman, CEO of the Coriell Institute for Medical Research in Camden, N.J., which focuses on genetic medicine. "The interpretation is complicated."

Christman says the greatest potential for genetic medicine right now is using DNA profiles to determine how people might react to different drugs or doses, a field called pharmacogenomics. More than 100 drugs have information on their labels warning that people with certain genetic markers may respond differently.

For the FDA, the challenge will be to effectively police the evolving market for genetic tests, says Joy Larsen Haidle, president of the National Society of Genetic Counselors: "What got some of the labs into trouble before with the FDA was, you could send a sample of saliva to a couple of different labs, and you would get very different results to the same question." *—John Tozzi*

The bottom line The FDA is starting to police more actively some of the genetic tests in what's become a $1 billion consumer market.

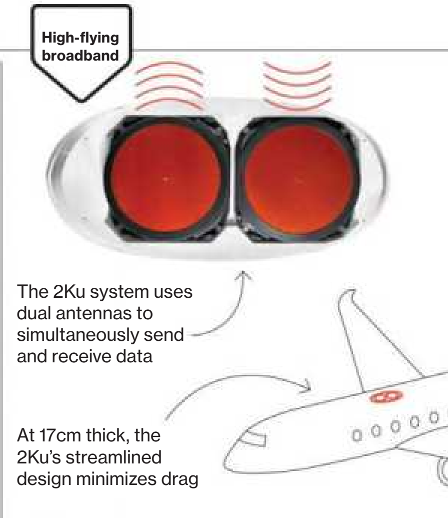
Networking

Making Airplane Wi-Fi A Little Less Awful

▶ **Gogo's satellite Internet appears to stream video without glitches**

▶ **"If anything needs to be connected, it's an aircraft"**

For years people have cursed lousy, expensive Wi-Fi on airplanes, with most of the ire directed at industry leader **Gogo**. Soon there may be fewer F-bombs dropped at 35,000 feet, as Gogo uses satellites to introduce more



stable broadband coverage that delivers data at faster speeds. "Bandwidth equals revenue. Bandwidth equals better customer service," says Chief Executive Officer Michael Small. "It's literally that simple."

The new system, called 2Ku, uses two antenna arrays on an aircraft to receive and send data from several satellites on the Ku band, a range of the electromagnetic spectrum akin to microwaves. Gogo says its antenna setups add minimal aerodynamic drag because they protrude only 6.7 inches above a plane's frame. In a Nov. 12 demo for reporters aboard a company Boeing 737, it worked pretty well, streaming the most data-intensive services—**Netflix**, **FaceTime**, **YouTube**, **Periscope**—without incident as the plane circled Indiana. There was a bit of delay before some Web pages loaded, but once up, they worked fine.

Gogo says 2Ku can deliver speeds as fast as 70 megabits per second around the world, compared with the maximum 9.8 Mbps of its domestic ground-based technology, called ATG4. While two dozen reporters don't use as much data as hundreds of passengers, Gogo says it's stress-tested 2Ku on numerous flights and hasn't found bandwidth problems. Small wouldn't discuss pricing.

AeroMéxico received certification to use 2Ku on Nov. 11 and is expected to begin flying satellite Internet-equipped jets within weeks, followed by **Virgin Atlantic**. **Delta Air Lines** is the largest U.S. airline to commit to the service, which it'll offer next year. A total of eight airlines have contracted to have 550 planes retrofitted with the 2Ku system. Small says most of the

Digits

$250m

The size of a fund the **British government** has set up to buy or invest in cybersecurity startups, according to a Nov. 17 speech by **Chancellor George Osborne**.

The government plans to double its annual spending on cyberdefense, to £1.9 billion ($2.9 billion), by 2020 installations will occur in 2017 and 2018.

The company could use a boost. On Nov. 5, Chicago-based Gogo posted quarterly revenue of $126 million, up 22 percent from the same period a year earlier, but a net loss of $29 million. The lack of capacity on its ground-based network has driven Gogo's prices up to $40 on some flights, and the satellite push is the only way it can expand its franchise outside the U.S.

Four-year-old Gogo's dominance of the in-flight Wi-Fi business is under assault by rivals including **ViaSat**, **Panasonic**, and **Global Eagle Entertainment**. Unlike Gogo, ViaSat owns and operates its own satellites. It has added antennas to about 450 commercial jets, including more than 292 at **United Airlines** and 150 at **JetBlue Airways**, which says it will make Wi-Fi free fleetwide by mid-2016. (**Amazon.com** subsidizes the JetBlue service.) Says Don Buchman, ViaSat's vice president for commercial mobility: "2Ku is only half as good as our service."

Both companies' technologies offer fast speeds, but their models differ sharply. Gogo can't slash its retail prices without alarming shareholders, says Tim Farrar, an analyst at researcher TMF Associates. It does, however, have more geographic coverage with 2Ku than ViaSat enjoys, because it contracts with multiple satellite providers to cover 98 percent of commercial routes. The 2Ku system won't work while a plane is traversing the Arctic Circle, which many flights between the U.S. and Asia do.

Beyond consumer uses, Small says more bandwidth can help give pilots better tools. Weather-forecasting technology is the hottest current area for growth, says Andrew Kemmetmueller, Gogo's vice president for airline applications as well as real-time aircraft maintenance monitoring. Eventually, Small says, the largest slice of Gogo's revenue will come from transmitting planes' performance data. "If anything needs to be connected," he says, "it's an aircraft." —*Justin Bachman*

The bottom line Gogo's 2Ku satellite service, for which prices have yet to be announced, has worked well on test flights.

Innovation

Fish-Free Feed

"I think we need to learn to better utilize all the nutrients on this earth. I'm worried about my grandchildren not having enough food."
—*Rick Barrows*

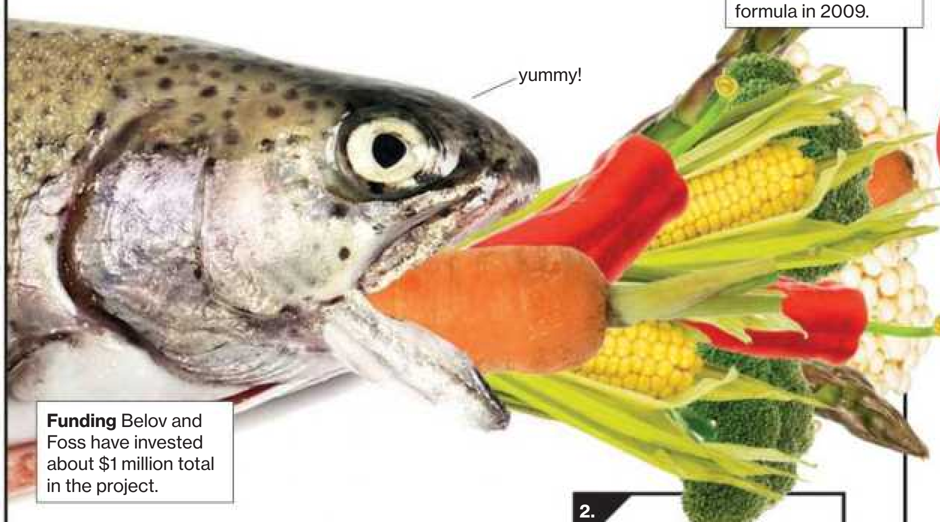
Form and function
Farmed fish have long been raised on feed containing ground wild fish, contributing to tighter supplies and higher prices. TwoXSea claims to be the first company to cultivate trout on a vegetarian diet.

Innovators Rick Barrows, Kenny Belov, and Bill Foss
Ages 60, 39, and 51
Fish nutritionist at the USDA's Agricultural Research Service in Bozeman, Mont.; co-owners of wholesale seafood startup TwoXSea in San Francisco

1.
Mix TwoXSea's feed mills use extruders, which resemble large pasta-making machines, to combine algae, flax, pistachio byproducts, and other ingredients.

Background
Aquaculture provides almost half of all fish for human food, according to the UN Food and Agriculture Organization.

Origin Barrows began working on reducing fish meal in feed in 1988 when he worked for the U.S. Fish and Wildlife Service. Belov and Foss asked him to create a fish-free formula in 2009.



Funding Belov and Foss have invested about $1 million total in the project.

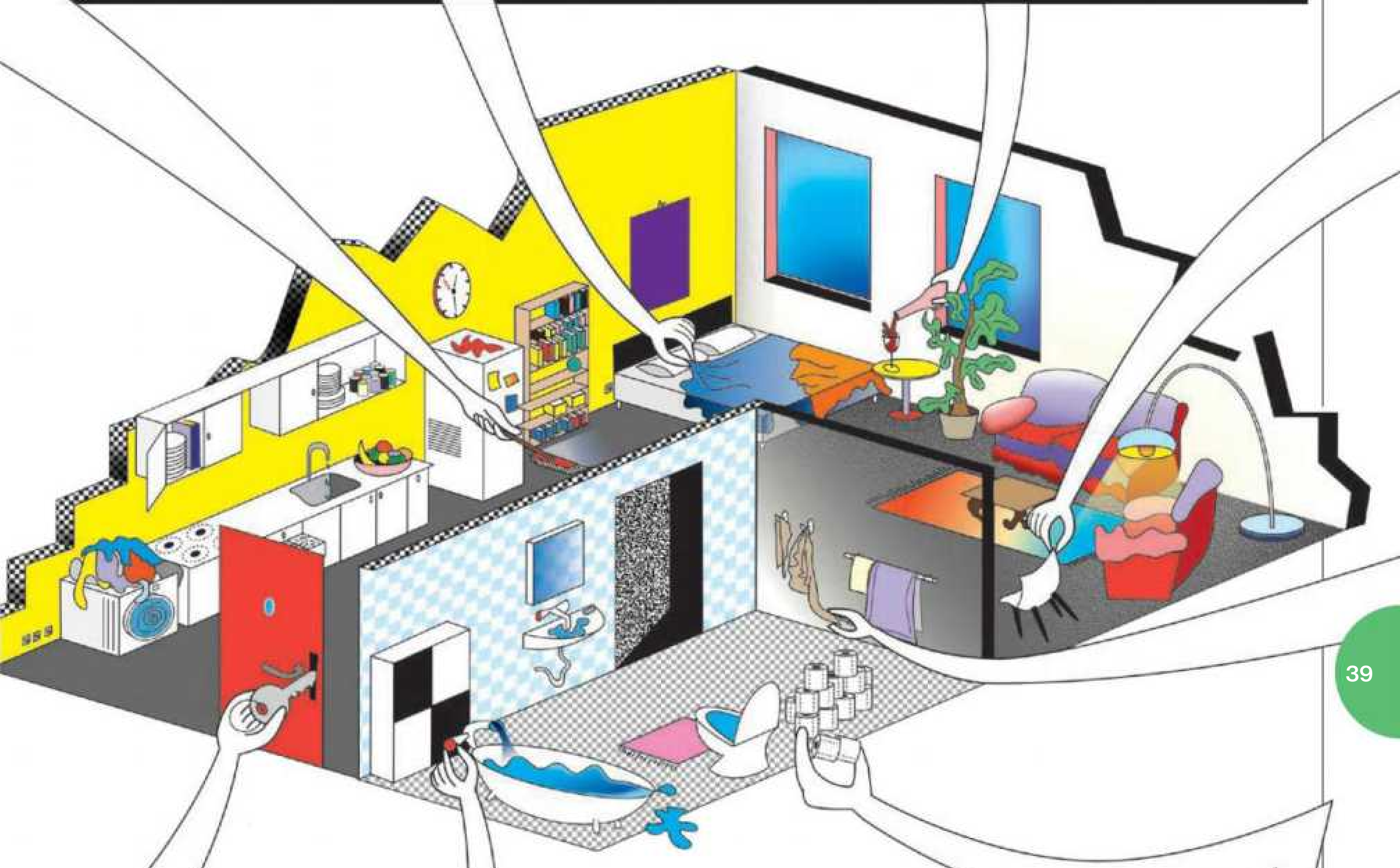
Cost Belov says TwoXSea's feed costs about $1.50 a pound to make, compared with 75¢ for the regular stuff, mainly because of the high price of fish oil substitute DHA.

2.
Use Barrows's first formula was designed for trout. He's designed 11 more, including meals for salmon and yellowtail. Species' protein and energy requirements vary considerably, he says, but vitamin, mineral, and amino acid needs are pretty consistent.

Next Steps

Foss and Belov say their trout ($7.95 a pound wholesale) has sold out since they started distributing it in 2010, as has the recently introduced tilapia. Their 19-employee company delivers about 200,000 pounds of fish a year and is trying to increase production. "This is the way the industry is going to go," says Kevin Fitzsimmons, a University of Arizona environmental science professor who's judging a fish-free feed contest with the Monterey Bay and New England aquariums that began on Nov. 9. "The aquaculture industry is growing so quickly around the world that we've got to find alternatives." —*Nick Leiber*


EVER-CHANGING LANDSCAPE
INNOVATION
OLD-FASHIONED



Startups Give Airbnb Hosts A Helping Hand

▶ **As short-term rentals boom, companies offer housecleaning, key exchanges, and pricing advice**

▶ **"There is a real industry here. It's not just a fad"**

Ryan Scott figures he brings in half a million dollars a year from 14 San Diego homes he owns and rents out by the night using **Airbnb**. And he hasn't had to quit his job at IBM to play full-time landlord because he outsources much of the work of running the houses to **Guesty**, a Tel Aviv startup that screens guests, sends them check-in details, and responds to all their inquiries within an hour.

As more real estate investors use short-stay websites such as Airbnb and **HomeAway** to build rental empires, an ecosystem is growing to help them—and casual Airbnb hosts—manage and maintain their properties. Offering everything from housecleaning to key exchange, the new companies aim to provide hotel-like amenities for travelers who otherwise want to live like locals, at least for a night or two.

Many of the Airbnb service companies have started in the past two years, just as complaints from neighbors about the flow of strangers next door have grown louder and city governments have begun challenging Airbnb over zoning and tax issues. Even so, there's plenty of opportunity ▶

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> "There's a huge spike in people asking us whether or not a property is Airbnb-able." —*Nathan Tobin, Guesty*

to grow, says Jeremiah Owyang, an analyst at research firm Crowd Companies: "There's a real industry here. It's not just a fad."

The startups include **GuestPrep.com**, a turndown service that replaces towels and sheets and reports on the state of the property; **Airspruce**, which links hosts with professional travel writers to pen listing descriptions; **White Spider Rental Concierge**, which provides design services for Portland (Ore.) Airbnb properties; and **Keycafe**, which allows guests around the world to pick up keys from neighborhood restaurants. "There's a huge spike in people asking us whether or not a property is Airbnb-able," says Nathan Tobin, head of growth and marketing for Guesty, which has 30 employees and manages about 3,000 listings.

Beyond Pricing offers software that helps owners vary rates based on supply and demand. As Pope Francis's visit to Philadelphia drew near in September, the company advised clients to keep prices low after detecting a glut of supply, co-founder Ian McHenry says. Hotels, which raised rates to almost $1,000 a night, scrambled to fill empty rooms, he says. The company, less than 2 years old, helps price about 10,000 properties. In return, it gets 1 percent of the revenue from each booking. "Hotels are used to fixed supply," says McHenry. "You can't just build a new hotel. You can all of a sudden turn on a lot of Airbnbs."

Proprly, a cleaning and guest check-in service in Manhattan and Brooklyn, has couriers hand over keys, help with luggage, familiarize renters with the unit, and offer tips about local restaurants and coffee shops, says Chief Executive Officer Randy Engler. It helps with unusual requests: Last winter it bought a space heater and rushed it over to a guest stuck in an ice-cold apartment. Proprly bought groceries for another guest who hired an executive chef to cook dinner for a gathering of his fund's limited partners, Engler says.

One startup, **Rented**, has created a kind of secondary market for property owners who want rental income without the work. The company lets owners offer blocks of nights in their homes to a group of professional property managers. The 425 or so managers who use the service bid against one another for the right to rent out the space. They're then on the hook for the agreed-upon price and for renting and maintaining the house or apartment. "It's clean and pristine when the owner shows up," says Andrew McConnell, who co-founded the company and runs it out of Atlanta. "The rest of the time they're just cashing checks."

The startups are making it easier for investors to expand their portfolios just as cities are trying to crack down on short-term rentals. New York Attorney General Eric Schneiderman concluded in a 2014 report that as many as 72 percent of Airbnb reservations in the past several years violated state law, with some people listing multiple properties, which he called "illegal" hotels. In San Francisco, Airbnb spent $8.4 million to help defeat a Nov. 3 ballot measure that would have limited short-term rentals to 75 days a year from the current 90 days.

About 79 percent of hosts nationally are families sharing their primary residence, according to Airbnb. CEO Brian Chesky said in a recent blog post that the company, last valued at $25.5 billion, plans to share more data with cities, such as the amount of income earned by an average host, and will ensure hotel and tourist taxes are paid.

City ordinances don't worry Scott Shatford, who says he makes "six figures" annually from his five Santa Monica (Calif.) properties. A rule that took effect in June prohibits stays of less than 30 days in homes where the host isn't living, with fines of as much as $500 per day. He says enforcing the ban will be difficult because Airbnb listings don't include addresses. Shatford has also started **Airdna**, a data analytics firm for Airbnb hosts that tracks the daily performance of more than 400,000 listings.

One low-risk approach to building an Airbnb portfolio, Shatford says, is signing yearlong leases instead of buying the properties. When you lease a house, the worst that can happen is that a landlord who objects to your renting out the property on Airbnb terminates the lease, keeping your security deposit. That happened to Shatford in March, but it turned into a business opportunity. "As soon as I signed the documents saying that I'd be leaving," he says, "the landlord asked me how much I would charge to consult for him to list other units on Airbnb." —*Prashant Gopal and Heather Perlberg*

The bottom line As local governments try to rein in companies such as Airbnb, an industry has grown up to support a new generation of landlords.

[redacted]

Investing

Fidelity Sends a Chill Through Silicon Valley

▶ **The mutual fund giant writes down its stakes in tech darlings**

▶ **"If that doesn't trip your alarm bells…your alarm bells have failed"**

Dropbox's decision to raise funds privately last year was supposed to buy the cloud storage provider more time to grow while avoiding the constant scrutiny and daily stock-price fluctuations that come with being publicly traded. The round of financing valued the company at $10 billion. "Our investors are happy," Chief Executive Officer Drew Houston said in June. "Things have been going well." Dropbox had no plans to go public anytime soon, he said. But in some ways, it already has.

Dropbox got a shock recently when money managers **Fidelity Investments** and **BlackRock** wrote down the value of their stakes in the company. Fidelity also marked down its holdings of **Snapchat**, **Zenefits**, and other technology companies that aren't publicly traded, according to data from research firm Morningstar. The disclosures, which were made in routine regulatory filings, surprised Silicon Valley. Many of the companies weren't aware that certain investors regularly adjust the value of their holdings and report the estimates publicly, say people with knowledge of the situation, who asked not to be identified.

Snapchat, an app for sending photos and video, was valued at $16 billion in a funding round this year. Fidelity bought 1.5 million shares for $30.72 each at the beginning of this year. It dropped their value by 25 percent, to $22.91, in its September filing. Max Wolff, chief economist at investment firm Manhattan Venture Partners, says the move brings a dose of reality to a closed world. “It’s become de rigueur for companies to double in value because 12 months have passed and they found new investors,” he says. “If that doesn’t trip your alarm bells, then your alarm bells have failed. The companies are overvalued.” Dropbox, Snapchat, and Zenefits declined to comment.

Technology companies have increasingly delayed going public, in part to avoid answering to impatient investors. There are more than 140 private companies around the world with valuations exceeding $1 billion, according to researcher CB Insights. Silicon Valley initially welcomed Fidelity, BlackRock, and other big money managers, because they could afford to throw around the amounts of cash big tech startups needed. More transparency was an unanticipated consequence. “They’re sort of semipublic companies now,” says Matt McIlwain, a managing director at Madrona Venture Group. “It’s an awkward space to be in.”

Venture capitalists say stamping a value every quarter on a company such as Snapchat, which still periodically reinvents its business model, doesn’t make sense. Two backers of the recently devalued companies, who asked not to be identified, say startups may now be more reluctant to take money from mutual fund companies. McIlwain blames them for driving up valuations in the first place by overpaying to get access to companies before other investors piled in.

Mutual funds are required to assess the value of their assets and report the numbers each quarter to the U.S. Securities and Exchange Commission. For holdings that aren’t publicly traded, the companies have committees that weigh measures such as growth rates and the market value of similar companies. The process is “more art than science,” says Greg Smith, senior director for fund accounting and compliance at the Investment Company Institute, a mutual fund trade association. Fidelity declined to comment.

Venture capitalists are wrestling with how to respond to writedowns by their co-investors, says Fred Wilson of Union Square Ventures, which backs Kickstarter and Foursquare. “VCs are now facing the choice of whether to mark down our portfolios in reaction to Fidelity’s markdowns, or explain to our investors and auditors why we did not,” he wrote in a Nov. 16 blog post. —*Sarah Frier and Dina Bass, with Eric Newcomer*

The bottom line Tech startups welcomed big money from the Fidelitys of the world—but didn’t expect the transparency that comes with it.

Stocks

Fear Grips China’s Finance Industry

▶ **Arrests and investigations rattle money managers**

▶ **The clampdown “has surpassed everybody’s expectations”**

In the aftermath of China’s summer market crash, a series of arrests and investigations targeting the finance industry has intensified in recent weeks, creating a climate of fear. At least 16 people have been arrested, are being investigated, or have been taken away from their job duties to assist authorities, according to statements and announcements compiled by Bloomberg News.


Yao, king of IPOs

In one of the most dramatic moves, Chinese authorities shut down part of a highway between Shanghai and Ningbo on Nov. 1 to arrest Xu Xiang, known as “hedge fund brother No. 1,” who was on his way to celebrate his grandmother’s birthday. “The extent of this round of clampdowns in the financial industry has surpassed everybody’s expectations,” says Hao Hong, chief China strategist at Bocom International Holdings in Hong Kong.

The goal is to lump practices such as insider trading together with other sins prosecuted by China’s anticorruption campaign. It also helps satisfy a desire among “some in the political leadership to find scapegoats to blame” for the market crash, said Barry Naughton, a professor of Chinese economy at the University of California at San Diego, in an e-mail. “Together these are creating uncertainty and anxiety that can only undermine the effort to make these markets work better.”

The government’s first response to the crash was intervention: state-directed purchases of shares, a ban on initial public offerings, and restrictions on previously allowed practices, such as short selling and trading in stock index futures. Next, high-ranking industry figures came under scrutiny as officials investigated trading strategies, decried “malicious short sellers,” and vowed to “purify” the market.

The campaign could backfire. First, policymakers say “now we’re ▶

Wielding the Ax

Putting a price on private companies is more art than science

Fidelity’s valuation	Dropbox per share		Snapchat		Zenefits	
	March	$19.11	June	$30.72	May	$14.90
	June	$16.28	Sept.	$22.91	August	$11.60

CHEONG KAM KA/XINHUA/ZUMA PRESS. DATA: COMPANY FILINGS innovating, so you can all come in—using high-frequency trading, hedging, whatever—to play in our markets," Gao Xiqing, a former vice chairman of the China Securities Regulatory Commission, told a forum in Beijing on Nov. 6. "A few days later, you say no, the rules we made are not right, there are problems with your trading, and we're putting you in jail for a while first. That makes our markets hardly predictable—such rules won't bring stability." Gao, who also ran China's sovereign wealth fund, teaches at Tsinghua University in Beijing.

22%

Gain in the Shanghai composite index from its Aug. 26 low

Yao Gang, a vice chairman at the CSRC, is under investigation for "alleged serious disciplinary violations," according to a Nov. 13 statement from the Communist Party's Central Commission for Discipline Inspection. Known as China's "king of IPOs," Yao supervised China's initial public offerings until earlier this year, when he switched to overseeing bonds and futures, according to *Caixin* magazine. He joins two other CSRC officials being investigated, including Zhang Yujun, who was formerly general manager of the Shanghai and Shenzhen stock exchanges.

The CSRC carried out unannounced inspections of several Chinese investment firms in November, taking away hard drives and mobile phones, according to people familiar with the seizures. Police in Shanghai also confiscated computers and froze $1 billion worth of shares in companies connected to hedge fund manager Xu. Following his arrest, anxiety has been palpable among other money managers who have performed well this year, according to hedge fund manager Lu Weidong, chairman of Xinhong Investment.

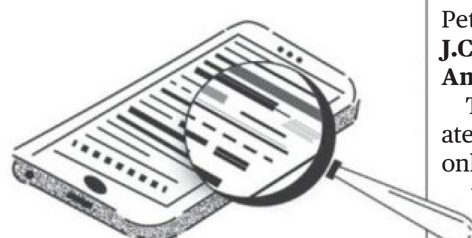
Xu kept such a low profile that few knew what he looked like until a photo of him in handcuffs went viral on the Internet. He's long attracted attention for his funds' exceptional investment returns, which had been "an outlier from a statistical point of view," according to Yan Hong, director of the China Hedge Fund Research Center in Shanghai. Amid turmoil in China's stock market, five funds managed by Xu yielded an "astonishing" 249 percent on average this year through September, according to research firm Shenzhen Rongzhi Investment Consultant. The Shanghai composite index fell 5.6 percent in the same period. None of the 16 people arrested or under investigation could be reached for comment. Officials at all the companies involved either declined to comment or couldn't be reached.

After plunging 41 percent from their June 12 high, stocks entered a bull market this month as investors began returning. The Shanghai composite index rose 22 percent through Nov. 18 from its Aug. 26 low. "Everybody knows that insider trading and market manipulation is something that repeated crackdowns have failed to eradicate," Yan says. "For this market to grow to a relatively mature level, like the U.S., we still have a fairly long way to go." —*Bloomberg News*

The bottom line The arrests and investigations that started with the 41 percent plunge in Chinese stocks have intensified in recent weeks.

Credit

Want a Loan? Let's See Your Cell Phone



▶ **Startups scan social data to assess first-time borrowers**

▶ **"A whole new market could open up" for banks**

A quarter of the people on earth have no bank account, no credit score, and no financial identity—which means no ability to borrow money. Several dozen startups are trying to bring those 2 billion people into the international financial system by monitoring cell phone use and other personal habits to predict creditworthiness.

The companies say phone habits,

People whose friends pay their bills on time are more likely to be reliable borrowers

Web-browsing and social media patterns, utility payment records, and psychometric tests can give lenders new ways to assess a potential borrower. Among their insights: People who don't let their phone batteries run low tend to make timely loan payments. Borrowers who get more calls than they make are a better risk. Applicants who state their loan purpose in a few words are preferable to essay writers. "If any one of these models succeeds, the ramifications are enormous for both the financial-services sector and international development," says Paul Christensen, a professor of finance at Northwestern University. "A whole new market could open up."

Kreditech, based in Hamburg, is both the biggest of the credit-scoring startups and the only one that makes loans. The company aims to become the Amazon.com of consumer lending in emerging markets, says Sebastian Diemer, a co-founder who's chief executive officer. It's raised more than €306.5 million ($326 million) in financing since its founding in 2012. Its financiers include **PayPal** co-founder Peter Thiel, private equity firm **J.C. Flowers**, and venture capital firm **Amadeus Capital Partners**.

The company's algorithms generate as many as 20,000 data points from online shopping histories, geolocation data for mobile phone calls, and similar information—accessed with the permission of applicants who are willing to sacrifice some privacy. Whenever Kreditech enters a market, it gives a €100 starter loan to all applicants to generate financial histories that can help refine its models. The company is up and running in nine countries, including Russia, Spain, and Poland, and issuing loans at the rate of €120 million a year. It has evaluated more than 2 million applicants, approved 15 percent of them, and has an overall loan-loss rate of 15 percent.

Some of the new companies go beyond data mining. **EFL Global** has designed a 30-minute test to measure creditworthiness that doesn't require

ILLUSTRATION BY 731

Internet access yet can be taken on a mobile device or a computer. **RevolutionCredit** has developed puzzles and games that test loan applicants and then teach them financial basics. Lenders who subscribe to its service can use the results as part of an applicant assessment.

Keys to creditworthiness can come from a person's daily routine. In places where people buy airtime for mobile phone use, those who purchase the same amount on the same day every week are a better credit risk than those who get a large amount, then let their depleted account languish, says **First Access** co-founder and CEO Nicole van der Tuin. When a phone stays in the same place every day, that's often a sign the owner's at work.

Traditional credit-risk assessments, according to these startups, have ignored the importance of social capital. In addition to serving as de facto bank statements, mobile and online footprints indicate how a community treats potential borrowers. Jeff Stewart, founder and chairman of Singapore-based **Lenddo**, says a person's friends are predictors for creditworthiness, just as they are for obesity or the propensity to smoke. People who have friends who pay their bills on time are more likely to be reliable borrowers themselves. Lenddo's system for measuring social standing has helped one Latin American lender cut the number of loan defaults in half, Stewart says.

World Bank President Jim Yong Kim launched a campaign in April to achieve universal financial access by 2020. In speeches he often says new technology will play a critical role in reaching that goal. The new credit-scoring businesses will push conventional lenders to use a broader range of information, says Michael Turner, who founded the Political Economic Research Council to bring financial services to more people around the world. "The rise of big data has convinced network operators and other data furnishers that they are sitting on a gold mine," he says. —*Sangwon Yoon*

The bottom line Dozens of startups are scanning phone records and social media and using new tests to assess borrowers' ability to repay loans.

Edited by Eric Gelman
Bloomberg.com

BID/ASK ILLUSTRATIONS BY OSCAR BOLTON GREEN

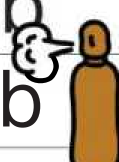
Bid/Ask

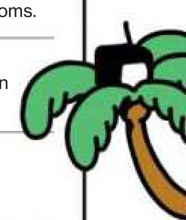
By Kyle Stock

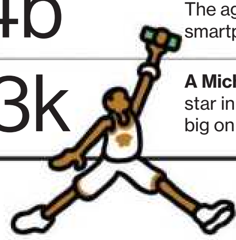
$1b

Constellation Brands buys Ballast Point. The acquisition scuttled a would-be IPA IPO. Craft beer maker Ballast Point filed a prospectus in mid-October to sell shares publicly. The company started in the back of a home-brew supply store and had sales of just $50 million in 2014. Its shipments are on track to double this year. Constellation bought the rights to sell Corona and Modelo beers in the U.S. in 2013.

$28.4b	**Canadian Pacific Railway bids for Norfolk Southern.** Although it's evaluating the offer, the targeted railroad called it unsolicited and "low-premium." Regulatory approval would be a concern.
$16.6b	**Nokia targets Alcatel-Lucent.** The Finnish hardware specialist is under pressure to broaden its customer base in the face of heightened competition from China's Huawei Technologies.
$13.4b	**Air Liquide to acquire Airgas.** The transaction lets the French company pump more hydrogen and other products into the U.S. market, where Airgas supplies factories and hospitals.
$12.2b	**Marriott buys Starwood Hotels & Resorts Worldwide.** The combination puts about 30 lodging brands under one roof and creates the first hotel company with more than 1 million rooms.
$5.3b	**Liberty Global snags Cable & Wireless Communications.** The deal gives John Malone's company a bigger presence in the Caribbean and Latin America.
$2.4b	**ON Semiconductor purchases Fairchild Semiconductor.** The agreement will help ON shore up its automotive and smartphone offerings as the chip industry consolidates.
$173k	**A Michael Jordan trophy.** The jersey worn by the basketball star in his final regular-season game as a Chicago Bull scored big on the auction block. Jordan tallied 44 points that day.








Kristen Valnicek
aka
KittyPlaysGames

Profit Stream

Entertainment you don't understand is now a business too big to ignore

BY FELIX GILLETTE AND SPENCER SOPER

PHOTOGRAPHS BY MOLLY MATALON

Kristen Valnicek stared at her computer in disbelief. She cupped her hands over her mouth and fell to her bedroom floor. "I can't feel my body," she wailed. Then she hopped up and started dancing. She looked back at the screen. "Oh my God, it's real." Someone with the username Andy, a fan she'd never met, had just given her a D–her shorthand for donation–of almost $7,000. "Mom!" she yelled. "I got the biggest D ever!"

Several months earlier, in early 2014, Valnicek had dropped out of the University of Saskatchewan, where she'd been an undergraduate studying accounting and law, to pursue a new kind of Internet career: playing video games for a live, online audience. Her father, a doctor, was ambivalent. Valnicek, whose bright green eyes and dyed black hair make her look like Shannen Doherty during her *Beverly Hills 90210* years, pressed on. Soon, for three hours a day, five days a week, using the screen name KittyPlaysGames, Valnicek was streaming herself playing death matches in various games, most frequently Counter-Strike, a popular first-person shooter.

Fans follow her footage on a website called Twitch, which bills itself as a social network for video game fans. Typically, they watch Valnicek in a split-screen format, with her gameplay in one window and a smaller projection of her head and torso, captured via webcam, in another. While Valnicek wanders through battlefields slaying terrorists, she banters with her audience, welcoming familiar viewers to the stream, thanking everyone for watching, encouraging fans to check out her other social media pages, and playfully turning down marriage proposals. Occasionally, she'll back away from the computer to show off one of her signature moves, nimbly moonwalking for the camera. Growing up, Valnicek dreamed of being a doctor or a corporate rainmaker, not an entertainer. Her skills as a performer are self-taught. "My success is really dependent on how happy, bubbly, and excited I am," she says. She's now 23 and one of the top performers on Twitch. It's her full-time job and occasionally results in a spontaneous four-figure D.

To anyone born before 1990, all of this may sound nonsensical. As Jimmy Kimmel, ABC's late-night host, put it in a recent monologue: "To me, watching another person play video games is like going to a restaurant and having someone eat your food for you." The segment ended with a skit in which God, looking down from on high, concludes: "I've created a race of idiots."

Twitch, which was launched in 2011 as the side project of a floundering San Francisco startup, has grown into a global vortex of adolescent veneration. Last year the analytics firm Deepfield found that Twitch regularly broke into the top four users of Internet bandwidth, trailing only Netflix, Google, and Apple. In August the site attracted 10.2 million unique visitors in the U.S., according to ComScore, up 15 percent from last year. The company says its viewers, 95 percent of whom are male, watch for 106 minutes a day on average.

Stars such as Valnicek gather admirers as they narrate action, explain strategy, mock opponents, and celebrate victories. Along the side of the screen, in an emoji-strewn chat stream, everyone mixes it up. With little more than a fast Internet connection and a webcam, anybody can become a Twitch broadcaster.

Attracting an audience is the hard part. First-time visitors to Twitch contend with a dizzying, kaleidoscopic galaxy of viewing options. The range of channels to choose from feels endless. There are swarms of people playing League of Legends, World of Warcraft, FIFA soccer, Mario Kart, Minecraft, Guitar Hero, Grand Theft Auto, Farming Simulator (which is exactly what it sounds like), Poker, Destiny, Halo–and on and on. The biggest clusters of fans tend to form around live professional tournaments, also known as eSports, or on the streams of particularly charismatic Twitch personalities.

Thanks in part to the surging popularity of eSports–particularly in Asia but also increasingly in North America and Europe–video-game-inspired programming is emerging as a lucrative sector of the entertainment industry. This year, 486 million people around the world will watch "gaming video content," according to the market analysis firm SuperData Research, up 28 percent from last year. The genre now generates $3.8 billion in estimated revenue, primarily from advertising and corporate sponsorships. Meanwhile, according to Nielsen, in the second quarter of this year TV viewership in the U.S. among 18- to 24-year-old men fell 16 percent from the same period last year.

Twitch, which Amazon.com acquired in September 2014 for about $970 million, is the front-runner in this growing market, but it faces a serious challenge from a powerful adversary: Google's YouTube. While Twitch dominates live-streaming, YouTube is the premier destination for recorded-and-edited gaming clips. The most popular artist on all of YouTube is Felix Arvid Ulf Kjellberg, aka PewDiePie, a 26-year-old Swede who's grown rich laughing, screaming, and cursing maniacally while playing video games. His YouTube videos, of which there are a couple thousand, have generated more than 10 billion views.

Many video game personalities maintain a presence on both platforms, which, until recently, coexisted peacefully. In August, however, Google started YouTube Gaming, a site catering exclusively to players, their fans, and advertisers hoping to reach them. It features a new slate of live-streaming tools that directly target Twitch. Paul Verna, an analyst with EMarketer, says YouTube's frontal assault is the latest salvo in a broader war between Amazon and Google. For years, the two companies have been battling in e-commerce, mobile hardware, and cloud

"When the **Food Network** launched, nobody thought that **watching food shows** could be such a **huge thing. Gaming is the same way"**

KITTYPLAYSGAMES
664,000 FOLLOWERS
COUNTER-STRIKE

CAPTAINSPARKLEZ
1,245,000 FOLLOWERS
MINECRAFT

SODAPOPPIN
1,100,000 FOLLOWERS
HEARTHSTONE: HEROES OF WARCRAFT

RATEDEWITHELSPETH
45,000 FOLLOWERS
HEARTHSTONE: HEROES OF WARCRAFT

PUMAPLOW
6,000 FOLLOWERS
FARMING SIMULATOR

COURTESY TWITCH (5)

computing. With Amazon's acquisition of Twitch and Google's launch of YouTube Gaming, they're now squaring off over a critical component in the future of home entertainment. This year, according to EMarketer, YouTube will generate $4.28 billion in advertising revenue for Google. Amazon doesn't disclose ad numbers, but, Verna says, "Twitch has the potential to play a similar role within the Amazon ecosystem."

Emmett Shear, Twitch's co-founder and chief executive officer, says he isn't worried by YouTube's push into live-streaming. He argues that, while it may drive up the cost of talent acquisition, the competition will ultimately benefit his company. "The more of an attractive career it is to do live game streaming, the more quality people will do it," he says. "In the long run, anything that's good for the talent is good for us as well."

Not long after graduating from Yale in 2005, Shear and his classmate Justin Kan attended Y Combinator, an entrepreneurial testing ground in Silicon Valley. Shear and Kan came up with a madcap idea: Strap a video camera on Kan and begin broadcasting his life live over the Internet, 24 hours a day, on a site they christened Justin.TV. They called the new art form lifecasting.

From the get-go, Kan struggled to keep up with the Kardashians. Much of his lifecast involved eating and sleeping. Viewers were unimpressed. Eventually, Shear and Kan decided to open up their lifecasting platform to the masses. Soon, people around the world were broadcasting anything and everything—weddings, pets, home improvement projects, peewee soccer, pirated NFL games, cooking tips.

Of all the banal and esoteric things that appeared on Justin.TV, it was the streams of dudes playing video games that attracted the most viewers. Before long, Shear and Kan realized they'd stumbled into a severely underserved market. In the summer of 2011 the company launched Twitch.TV, a spinoff site for the video gaming community. The site's growth soon eclipsed everything else on Justin.TV, which they eventually shut down.

Today, Twitch's headquarters are in an office building in downtown San Francisco. Most of the common areas are tricked out with video-game-inspired décor. A Donkey Kong-themed room has scratch-and-sniff banana wallpaper. Twitch's head count is about 400 and growing. New hires are given a purple hoodie with their Twitch username prominently embroidered on it. A company spokesperson explains that the coveted garments—asking price on EBay: $185.95—aren't for sale to the general public.

Shear, 32, says there's nothing weird or mysterious about the viewing appeal of video games. If you enjoy working on your house, you watch HGTV. If you like playing basketball, you watch the NBA. If you like video games, you watch Twitch. "When the Food Network launched, nobody thought that watching food shows could be such a huge thing. Gaming is the same way," Shear says. "It's a linear streaming format. People are hanging out and watching for long periods of time. That creates a very different dynamic than coming in and out for two minutes of video at a time like you might at Facebook or YouTube. This is more like TV than it is like anything else online."

One of Twitch's goals is to keep making it easier for newcomers to start streaming. At the same time, the company is busy developing better tools for its existing broadcasters. It's working on a more effective search function and a less bug-prone video player. In the early days, almost all users were live-streaming via personal computers. Since then, Twitch has worked closely with video game console makers to

“You’re still going to get people who are like, ‘So, you’re a cam girl? You get naked on camera?’”

integrate broadcasting technology into their hardware. Sony PlayStation 4 owners, for instance, can now hit a “share” button and be up and live-streaming on Twitch in minutes. “Our whole purpose in life is to enable our broadcasters to do better,” Shear says.

Twitch’s audience is growing quickly overseas, particularly in South America and Asia, and the company is building data centers around the world to keep up. “One of the cool things about gaming content is that it is global,” Shear says. “We plan to be investing heavily in places like Japan and Korea. We think those can be amazing territories for us.”

Twitch’s growth has been amplified in recent years by its broadcasts of eSports, in which teams of professional gamers battle for big cash prizes in front of sizable crowds. The top tournaments draw thousands of paying customers to arenas like L.A.’s Staples Center. Fans who can’t attend in person watch the tournaments online. Earlier this year, a Counter-Strike event in Cologne, Germany, attracted 1.3 million concurrent viewers on Twitch. In between tournaments, pro players often broadcast their practice sessions, which can also draw significant audiences. “The bigger eSports gets,” Shear says, “the bigger we get along with it.”

Whenever a big video game is released into the market, top Twitch personalities, hoping to ride the resulting wave of consumer curiosity, will test it out extensively for their viewers. Video game fans use these early, quasi-reviews on Twitch to help determine whether a game’s worth buying, making the video game studios giddy. As a result, all the major developers and publishers—including Nintendo, Sony, Activision Blizzard, and Microsoft—now maintain channels on Twitch where they orchestrate and conduct live-streams, showing off their wares. Recently, game developers have even started to build in features specifically designed with Twitch audiences in mind. The tech news site *Ars Technica* recently dubbed the phenomenon “Twitch bait.”

Occasionally, Twitch experiments with nongaming content. In March it hosted a live, sponsored broadcast of the Ultra Music Festival, an annual electronic music party in Miami. This fall the company unveiled a new section of the site, called Twitch Creative, devoted to people live-streaming themselves creating works of art: painting still lifes, blowing glass, building sculptures, composing music. To publicize its embrace of the do-it-yourself art crowd, Twitch hosted a Bob Ross marathon, airing archival episodes of the late public television art instructor painting clouds, brooks, and mountaintops, while thousands of Twitch users in an adjacent chat room alternately mocked and marveled at the mellow maestro’s languid technique.

Shear says expanding into other subcultures could eventually be a “massive opportunity” for Twitch. “But 99 percent of our attention is going into growing the gaming community. We believe there’s so much headroom left there.”

Valnicek frequently dresses up on Twitch in revealing costumes; past ensembles have included Wonder Woman, Lara Croft, and Catwoman. Her audience typically ranges from 2,000 to 5,000 viewers at a time; during the costumed performances, viewership can spike past 15,000. On traditional TV, such ratings would quickly get your show canceled. On Twitch, they’re enough to generate a hefty income.

Once streamers get established on Twitch, they can apply to become a so-called partner. If accepted, they sign a contract with the company under which they get a cut of whatever advertising, subscription, and merchandising revenue Twitch can generate from their channel. There are currently more than 12,000 Twitch partners. Valnicek is one.

VALNICEK AT HER TWITCH SETUP

Twitch allows its partners some leeway in choosing how often ads run on their channels. Broadcasters say the more important source of income, however, is subscriptions. Anyone can watch for free, but hard-core fans will pay about $5 a month to subscribe to their favorite channel. In return, they can participate in subscriber-only chats and get access to custom-made emoji. Until recently, Valnicek offered to send a "super secret" Snapchat selfie to anyone who got a three-month subscription. If you sign up for a year, she'll follow you on Twitter.

Valnicek says she has about 2,500 subscribers. She won't say how much of the roughly $12,000 a month in subscription money goes to her vs. Twitch. Likewise, the company declines to disclose the terms of its deals with partners. One broadcaster, who asked to remain anonymous, says the split is typically 50-50.

Valnicek's life sounds like a millennial fairy tale. She makes her own hours and can afford to live wherever she wants. Earlier this year, she spent several months renting a place in Vancouver. Then she moved to Berlin for the summer; now she's contemplating going to Seoul, where eSports tournaments fill soccer stadiums. Every day, she's bombarded with sponsorship opportunities. So far, she's done paid promotional events for Intel and Pandora. She won't specify her take-home income but says a career in corporate law would be a step down. According to SuperData Research, top Twitch personalities can earn upwards of $30,000 a month. A company spokesperson says Twitch has "dozens" of broadcasters making six-figure incomes.

Another way broadcasters like Valnicek generate cash is from viewer donations. On Valnicek's Twitch page, she lists the usernames of her top "Godlike" contributors. So far, more than 50 fans have given her gifts larger than $1,000. Valnicek has become semifamous for her wild reactions to the largesse. Her excitability seems to inspire dudes to one-up each other with the size of their tips.

It can get creepy fast. The gift from Andy, in the amount of $6,969.69, prompted Matavor to shell out $7,000.69. The chat room exploded with suggestions of ways Valnicek could show her gratitude. "Twerk for Andy." "Nudes for Andy." "I want nudes." "Striptease." "Rapetime."

Valnicek says she doesn't know who the Godlike donors are in real life, and reminds viewers frequently that she's in a committed relationship. "When people watch your stream, they truly feel like they've developed a connection and a relationship with you," she says. "I learned early on that it could be taken the wrong way. So you need to squash that out."

In September, an anonymous female Twitch streamer took to a public forum on Reddit using the handle Euryale11 seeking advice on how to deal with the scary behavior of certain viewers. "When I started streaming, I understood that I would get weirdos on my channel, and accepted that this was the Internet and I would experience creepy people," she wrote. "But threatening to hack me, find me, making sexual threats about me, is a little too much for me to handle."

Valnicek says the harassment is something female streamers have to deal with routinely. Acknowledging it in public, she says, tends to make it worse. Her coping strategy is to ignore the negativity, because "people are just looking for attention," and to focus her energy, instead, on friendly viewers. "Part of the communication between streamers is ensuring you find holes in your privacy and to patch them as soon as possible," Valnicek says.

All of which is a potential minefield for a company like Twitch trying to attract talent and advertisers. Jason Maestas, Twitch's director of community and support, responds via e-mail that the company uses "a mix of human monitoring, technology solutions, and channel management tools" to protect its broadcasters.

More than a year after selling to Amazon, CEO Shear says life as a cog in Jeff Bezos's everything store is copacetic. "We wanted to be acquired by a brand that allowed us to retain our culture and leadership," Shear says. "Amazon did something similar with Zappos. And they've been great with us."

Shear declines to share specific financial information but points to the company's recent success at selling paid subscriptions as evidence of the strong loyalty of users. The main reason people pay $5 a month for something they could largely get for free, he says, is so they can have a little subscriber badge next to their name in Twitch chats. "Why do you buy a Bulls jersey if you live in Chicago?" Shear asks. "It's a visible expression of your affiliation with this thing that you love."

Twitch's advertisers represent pretty much every lifestyle staple of young men: Pizza Hut, Mountain Dew, Old Spice, Foot Locker, and Universal Pictures' action movies. Most of the ads on Twitch look like and run the same length as TV commercials. "The 30-second spot is a classic," Shear says. "It's a tried-and-true, proven way to reach people with your message."

Earlier this year, a top personality named Tucker Boner (real name) starred in a 30-second ad for Taco Bell that ran exclusively on Twitch, in which he chows down on the chain's new biscuit tacos. One potential challenge for Twitch: Those young, tech-adept viewers increasingly use online adblocking technology. On his Twitch page, Boner explicitly asks his fans, instead of giving him tips, to turn off their ad blockers, saying, "Twitch ads are how I pay my bills."

"There's no great way to deal with it," he says. "But I feel like appealing to them and saying, 'Hey, man, this kind of sucks, but just disable it on my page,' is the only thing that works."

Boner, 22, dropped out of college a few years ago and moved to L.A. to try to make it as a full-time video game personality. He says he earns about $10,000 a month from Twitch—and more than that doing product endorsements for brands. Despite making a good living, he's grown accustomed to not getting a huge amount of respect from nongaming civilians. "At the end of the day, you're still going to get people who are like, 'So, you're a cam girl? You get naked on camera?'" he says. "It's way better than when I started. But we still have a ways to go."

He adds: "Bless my parents. They do their best to try and explain it to their friends."

In September, Twitch hosted its first TwitchCon, a two-day powwow inside San Francisco's convention center, designed to allow fans to genuflect in person to members of the gaming community and to recruit new streamers. More than 20,000 people attended.

Shear delivered the keynote address. With YouTube pushing into live-streaming, he announced a feature that will allow broadcasters to upload prerecorded and edited content onto their Twitch page—a direct counterattack on what has traditionally been YouTube's bailiwick.

Throughout the weekend, Twitch trotted out a procession of its top stars, who gave uplifting testimonies and sat on a series of vocationally oriented panels. Topics included "Broadcasting: It's not Rocket Science," "Passion to Paycheck: Making a Career out of Broadcasting," and "From YouTube to Twitch: Transitioning Your Content." The whole thing felt like a 21st century version of a Tupperware party.

At a panel on self-branding, a Twitch personality named Kyle Weaver soaked in the lessons. Not long ago, Weaver, 22, quit his job delivering pizza. He's streaming 30 hours a week, playing games such as Halo and The Elder Scrolls. "Some people want to be veterinarians, because they love animals," Weaver says. "Others want to be firefighters and be heroes. Doesn't everyone want to make a living doing something they love?" Ⓑ

THE GREATEST MUSEUM NEVER KNOWN

BY
PETER WALDMAN AND
GOLNAR MOTEVALLI

PHOTOGRAPHS BY
ALI KAVEH

THE EMPRESS OF IRAN'S COLLECTION SURVIVED THE ISLAMIC REVOLUTION. WILL THE COUNTRY AND THE REST OF WORLD NOW GET TO SEE IT?

INSIDE THE ROTUNDA OF THE TEHRAN MUSEUM of Contemporary Art, a circular walkway spirals down from the street level, like an underground version of Frank Lloyd Wright's Guggenheim Museum in New York. A series of galleries branches out from there, giving up astonishing secrets from one of the finest—if forgotten—collections of 20th century art in the world. A show this fall included abstract expressionist paintings by Kandinsky, Motherwell, Pollock, Rothko, and Stella, to name just a few from the museum's vault. Sculptures by Ernst, Giacometti, Magritte, and Moore are on permanent display in the garden. The corkscrew-shaped foyer wraps around a giant Calder mobile—its playful red shapes glinting in midair beneath the stern glares of Ayatollahs Khomeini and Khamenei in portraits above.

"ART CAN BE A BRIDGE BETWEEN IRAN AND THE WEST, BUT WITH SOME EXCEPTIONS"

On a crisp day in late October, the museum is an island of calm in downtown Tehran, a metropolis of 16 million people choked by traffic, smog, and rampant construction. The galleries are a ghost town, except for a dozen photography students who, for the $1.50 price of admission, have Jackson Pollock's 1950 masterpiece *Mural on Indian Red Ground* all to themselves. The 9-foot-by-8-foot scarlet canvas, splattered with white, gray, and black streaks, one of Pollock's largest paintings in his drip style, is regarded by many as his best. It was valued by Christie's at $250 million five years ago. Down the ramp, the students arrive at a pair of wall-size Mark Rothkos, each valued at $100 million to $200 million. Their professor bids them to ponder a quote from the painter printed nearby: "A painting is not about an experience. It is an experience."

As Iran lurches toward reengaging with the world after the end of years of sanctions, a crown jewel waits in history's shadow. Built by Shah Mohammad Reza Pahlavi's wife, Empress Farah Pahlavi, just before the 1979 revolution, the Tehran Museum of Contemporary Art amassed the greatest collection of modern Western masterpieces outside Europe and North America—and dropped off the map. Now it's reemerging. The museum is following up its big abstract expressionism show with a mixed exhibition of Iranian and Western art opening on Nov. 20. In October it signed a tentative agreement with the German government to send 60 artworks from Tehran—30 Western and 30 Iranian—to Berlin for a three-month show next fall, which would mark the museum's first exhibition overseas. A larger show could follow in 2017 at the Smithsonian's Hirshhorn Museum in Washington if political and legal circumstances allow, says the Hirshhorn's director, Melissa Chiu. "This is one of the great unseen collections of postwar European and American art in the world," she says. "We haven't seen these works in 40 years."

Shabazi was the official keeper of the museum's vault

Ayatollah Ruhollah Khomeini took power railing against "Westoxification," his notion that Western moral and sexual depravity had infected Muslim nations with a disease that could be cured only with strict rule by Islamic clerics. He banned Western films, music, and many books, forced women to wear the hijab, and castigated Iranian elites for being infatuated with foreigners. "With a European hat on your head," he wrote, "you would parade around the streets enjoying the naked girls, taking pride in this 'achievement,' totally heedless of the fact that the historic patrimony of the country was being plundered." As revolutionary mobs protested in the streets in January 1979 after the shah and his wife fled, the museum spirited its 1,500 works of Western art into a basement vault.

When armed militiamen showed up a month later, Mehdi Kowsar, the museum director, made the commander sign an inventory list showing the prices the empress had paid for every piece. Ten days later, Kowsar, a former dean of arts at Tehran University, flew to Italy with his family. He's never returned. To avoid questions at the airport, he left the list behind at his Tehran apartment. He hasn't seen it since. "It was a very dangerous situation," says Kowsar, 79, a retired architecture professor living in Rome. "I was hoping that if they signed something official, no one would steal anything."

The collection remained remarkably intact, minus an Andy Warhol portrait of Empress Farah, slashed years ago at one of her former palaces by a knife-wielding zealot, and a Willem de Kooning nude, sold to David Geffen in 1994 as part of a three-way trade on the tarmac of the Vienna airport for some 16th century Persian miniatures owned by a Clinton White House operative. More on that later.

The collection's survival is part of the larger Iranian paradox—the struggle of one of humanity's oldest and most refined civilizations to overcome an historic spasm of fundamentalism and xenophobia. Yet it's also the story of a simple man who had no idea what art was before joining the museum in 1977, and who made protecting the Western treasures his life's work.

IF YOU FOLLOW THE MUSEUM'S SNAIL-SHELL ramp to the bottom, slip past the velvet rope, go right at the industrial vacuum cleaner, and skirt by the Styrofoam-packed picture frames against the wall, there are two doors. The steel one on the right has a doorbell and a blue sign that says "exhibition services." It leads to the vault. The door on the left says "photography" and opens into a dimly lit room with concrete walls, a torn couch, and the cozy feel of the super's office in the basement of a New York City apartment building.

Firouz Shabazi Moghadam sits at a corner desk, below a high window that just clears ground level. He went to work for the museum two weeks before it opened, first as a driver and then, for 30 years after the revolution, as custodian of the vault. His official title: keeper. Still lanky at 63, with dark eyes that squint when he smiles, Shabazi came out of retirement two years ago to help catalog the museum's extensive holdings of Iranian art and photography, in addition to the Western collection, which he knows by heart.

One of his first jobs back in 1977, after being hired away from the company installing the museum's linoleum floors, was chasing down crates of unopened artwork all over Tehran. Many of the acquisitions of American art were made by the museum's founding director, Kamran Diba, the empress's cousin, who'd studied architecture at Howard University and designed the museum. At the same time, the empress, who'd studied art in Paris and preferred European works, hired her own buyers. They were forbidden from telling anyone what they were up to, says Donna Stein, who moved to Tehran in 1975 and spent two years buying art for the empress. Stein's now with the Wende Museum in Los Angeles. "It was wonderful, but very stressful," she says.

During the 1973 oil crisis, global art prices fell, and Iran got very rich selling oil. In 1976, David Nash, who ran Sotheby's impressionist and modern painting department in New York, flew to Tehran with a box of slides of paintings for sale by the Los Angeles collector Norton Simon at "ludicrously high prices," Nash says. He had to wait a week for a promised appointment with the empress's court chamberlain, who proceeded to spend the meeting lecturing Nash on an obscure copyright dispute Iran was having with Sotheby's at the time. He left the slides behind and went home, certain the trip had been "a complete fiasco."

A few days later, the chamberlain's office asked Nash for advice. What should it bid on at Sotheby's coming auction, the estate sale of Holocaust survivor Josef Rosensaft? He suggested a few works; Iran bought the entire lot. The haul included Paul Gauguin's 1889 *Still Life With Japanese Woodcut*, which cost $1.4 million, a record at the time for the artist. Nash says it's worth $45 million today. Majid Mollanoroozi, the museum's director, says Japanese collectors have offered "a blank check" for the painting.

Shabazi took control of the vault after Kowsar and the other art professionals fled. Only a high school graduate, he read books to learn about art, as he tried to identify several Western paintings whose paperwork was lost. He grew to love the works. After the gunmen occupied the building for several days, the regime appointed a 20-person committee to run the museum that had no idea what was there. Shabazi took the revolutionaries into the vault two by two to show them that nothing untoward was going on. They were shocked at the childish pictures they found.

"They'd say, 'What is this? I could do better than that,' " Shabazi says. "I'd tell them it's a Picasso, and they'd say, 'So what if it's a Picasso!' " As chaos engulfed Tehran's streets, Shabazi spent most of the next two years locked in the vault with the artwork and the keys. "I didn't want anything to happen," he says.

The main galleries of the museum reopened as an exhibit hall for revolutionary propaganda, cheering martyrdom and resistance

↑ $8M

PIERRE-AUGUSTE RENOIR, *GABRIELLE WITH OPEN BLOUSE*, 1907

↑ $45M

PAUL GAUGUIN, *STILL LIFE WITH JAPANESE WOODCUT*, 1889

during Iran's eight-year war with Iraq in the 1980s. Occasionally people showed up at the vault with official letters demanding to borrow paintings for a cultural center or one of the shah's opulent palaces, which had been converted into public amusements. Shabazi refused to unlock the doors, suspecting such loans would never be returned. "Only God knows where I got this courage from—I who am normally so afraid," he says, with tears in his eyes. "With this vault, with this museum, I am like a lion."

IT WASN'T UNTIL 1999, A DECADE AFTER Khomeini's death and 20 years after the shah fled, that the museum mounted its first postrevolution Western show—a pop art exhibit featuring works by Hockney, Lichtenstein, Rauschenberg, and Warhol. An uneasy détente has settled in, mirroring the seesawing ascendancy of reformists and hard-liners in Iranian politics. Since 2013, technocrats in the economic and cultural ministries, appointed by President Hassan Rouhani, have tended to push the revolution's boundaries against conservatives in the security and judicial establishments, which are controlled by Supreme Leader Ayatollah Ali Khamenei.

At the museum, that means the directors, who report to the Ministry of Culture and Islamic Guidance, hang a few dozen Western pieces each year for several weeks. They're careful—usually—not to rile government conservatives with racy images, or bait them with the idea that the museum's most significant portfolio is its world-class collection of post-World War II works by Americans, many of them gay or Jewish. The role of Empress Farah, now 77 and living in Washington and Paris, remains publicly unmentionable.

The vault holds a small treasure trove of artwork that Iranians will never see, at least while the current regime is in charge. It includes nudes by Pablo Picasso and Edvard Munch; a large canvas by André Derain, called *Golden Age*, depicting 11 unclad women frolicking in nature; and Pierre-Auguste Renoir's *Gabrielle With Open Blouse*, a beguiling portrait of a bare-chested young woman with her shirt unbuttoned to her navel.

In 2005 a provocative museum director named Alireza Sami Azar exhibited Francis Bacon's 1968 triptych, *Two Figures Lying on a Bed With Attendants*. The figures, as a museum guard quickly noticed, are naked men, each reposing on his right side. The guard alerted the Ministry of Culture and Islamic Guidance, which ordered the image taken down. Sami Azar demanded the decree in writing, stalling for time so the British ambassador and other dignitaries expected that evening at the show's opening could see the Bacon piece.

"I said 'Look, they're male figures, they're not female, and they're semi-abstract. It's not obscene. They could be brothers,'" chuckles Sami Azar, who now lectures on art at a Tehran gallery. "They said, 'C'mon, we know they are homosexuals, they're sleeping in bed. This creates a scandal for us, just when conservatives are coming to power and looking for excuses to bombard us.'"

The ministry's written order didn't come until after the guests arrived. They got to see the complete triptych on their way in, and a nail where the panel with the sleeping men had hung on their way out.

"Art can be a bridge between Iran and the West, but with some exceptions," explains Hossein Sheikholeslam, one of the student radicals who occupied the U.S. Embassy in 1979 and went on to serve in several prominent positions in the revolutionary government. "Nudity and homosexuality are not acceptable in Iranian culture," he says.

YOU CAN'T HEAR THE DOORBELL RING FROM outside the double gray doors of the vault, but the slam of a deadbolt signals someone is coming. Inside is another doorbell and another steel door, this one about 6 inches thick with a black

↑ $75M
FRANCIS BACON, *TWO FIGURES LYING ON A BED WITH ATTENDANTS*, 1968

↑ $30M
PABLO PICASSO, *THE PAINTER AND HIS MODEL*, 1927

↓ $200M
JACKSON POLLOCK, *MURAL ON INDIAN RED GROUND*, 1950

combination lock above the handle. It creaks open, revealing a long concrete room with 32 floor-to-ceiling sliders—wire-mesh slats framed in steel—pushed against the wall on both sides. Only two paintings are visible: a dour portrait of Ayatollah Khomeini on floor blocks to the right and Picasso's 45-square-foot masterpiece from 1927, *The Painter and His Model*, on the far wall, acclaimed as "one of the supreme achievements of his career" by art historian Jeremy Melius of Tufts University.

Starting next to the Picasso, Shabazi and his handpicked successor pull the sliders screeching on their tracks into the center of the room for viewing, oldest paintings first. It looks like a poster store, with images hanging by the dozen on each metal fence. The collection starts in the late 19th century with works by Monet, Gauguin, Pissarro, Toulouse-Lautrec, Van Gogh, and Rodin. Toward the mid-20th century, one slider alone holds 10 Picassos (of the museum's roughly 30), two Marc Chagalls, a Georges Braque, and a Diego Rivera.

The bulk of the collection, from after World War II, is found in the vault just past the air-conditioning duct. There are about a dozen Jasper Johnses and Robert Rauschenbergs each and at least 15 Warhols. Among them is a Warhol *Mick Jagger*, a *Marilyn Monroe*, and a series of 10 *Mao*s. Most valuable is his 1963 acrylic of a man jumping off a building, called *Suicide (Purple Jumping Man)*. Another of Warhol's rare Death and Disaster paintings sold for $105 million in 2013.

Shabazi's favorites: the Rothkos, he says, pulling closed the heavy vault door behind him. "I've had a lot of problems in my life, and they always calm me down."

THE MUSEUM GETS FREQUENT OFFERS TO buy its paintings, most recently from a Monaco foundation that wants to buy Bacon's triptych for €103 million ($110.7 million). But nothing's for sale, not even the works deemed unpresentable, says Mollanoroozi, the director. "If we sell them, what would we buy instead worth that much?" he asks. He's hoping revenue from the overseas shows will fund the museum's first acquisitions in 40 years, as well as needed improvements such as new lighting and carpets and waterproofing to protect the vault in a flood.

About 12 years ago, Sami Azar hired Christie's to value the nudes, hoping to use the proceeds from a sale to update the collection. Then-President Mohammad Khatami approved the idea but said parliament should make the final decision. Sami Azar decided not to risk it. Selling the art is easy, he says. Getting the money back from the government to buy more could be treacherous.

In four decades, the museum has parted with just one Western piece, the de Kooning, exchanged in 1994 for the remnants of a renowned 400-year-old book of miniatures known as the *Shahnama of Shah Tahmasp*. The *Shahnama*, or *Book of Kings*, was owned by the Houghton family, heirs to the Corning Glass Works fortune, who'd offered it to Iran before the revolution for $28 million, says Mehdi Hojjat, a former deputy culture minister who engineered the exchange. The shah balked, but in 1991, Arthur Houghton III, a U.S. diplomat working in the White House on the war on drugs, reopened negotiations through an art dealer in London. Houghton hid the secret arrangements from his bosses while shielding his identity from the Iranians, who he thought might get spooked if they knew where he worked. "I couldn't be exposed," he says.

The deal took three years to negotiate. At first, the intermediaries demanded five paintings for the *Shahnama*, including the prized Pollock, a Miró, a Picasso, and Renoir's revealing *Gabrielle With Open Blouse*. Hojjat took the matter up to Iran's Supreme Cultural Revolutionary Council for a decision, providing photographs of each of the works. In the end, the Iranians would give up only the de Kooning, which depicted a grotesque, misshapen woman without any clothes on.

Shabazi remembers loading the painting onto the jet at dawn in Tehran. Hojjat, worried the U.S. government might try to seize the work as compensation for other disputed assets, arranged to have it whisked away from the Vienna tarmac to an art dealer in Switzerland. At the same time, the *Shahnama* was loaded onto Hojjat's plane and flown to Tehran. The de Kooning was sold to Geffen in California for an estimated $20 million. The Houghton family received $10.5 million of those proceeds for the *Shahnama*, much of the rest going to middlemen. Geffen resold the de Kooning in 2006 to hedge fund magnate Steven Cohen for $137.5 million.

Hojjat recalls the most surprising comment he got during the long talks over what Iran would or wouldn't exchange for the *Shahnama*. One of the religious authorities on the supreme revolutionary panel was quite adamant about *Gabrielle With Open Blouse*, a portrait of the woman who worked for the Renoir family as a nanny. "This Renoir painting is very exquisite," the man said. "Do not give it away." Ⓑ

MOST ART AUCTION HOUSES WON'T OFFICIALLY APPRAISE PIECES THAT HAVEN'T BEEN ASSIGNED TO THEIR FIRMS FOR SALE. EXPERTS SHARED THEIR ESTIMATES ON THE CONDITION THEY NOT BE IDENTIFIED.

KRO

HE TAKES WHAT HE WANTS. NOW

ENKE

HE WANTS L.A. BY IRA BOUDWAY

At the NFL owners' meetings at the Waldorf Astoria New York in October, reporters are kept in a hallway behind velvet ropes. They wait all day for anything they can get.

"You guys are in the pen? What's going on over here?" NFL Commissioner Roger Goodell says as he walks by in the morning.

"You make the rules," says one reporter.

"I didn't make those rules," Goodell says over his shoulder.

Now and again, an owner, this time Jerry Jones of the Dallas Cowboys, leaves the ballroom where the meeting is and walks down the hall to the men's room at the other end. "Mr. Jones? Jerry?" the reporters plead. "Do you have a minute?"

Jones stops, and a scrum forms. Nobody has to say what everybody wants to know: What's the latest on Los Angeles? "We have the opportunity to do something special," Jones says, before ambling away. The reporters huddle to parse his words. He must mean the Stan Kroenke plan.

The National Football League wants to put at least one franchise in Los Angeles by the start of next season. Kroenke, the owner of the St. Louis Rams and arguably the most powerful owner in sports, wants it to be his. He's ready to build a $1.9 billion stadium southwest of downtown. He has big backers. Jones, who built an 80,000-seat cathedral to excess known as "Jerry's World" for his Cowboys in 2009, admires the grandeur of Kroenke's plan and has sided with him against owners from the San Diego Chargers and Oakland Raiders, who want to build and share a stadium in the L.A. suburb of Carson, bringing two franchises to the city at once. Jones's tossed-off comment about "something special" is the tiniest scrap, but when you're covering Kroenke, that feels like a meal. He seldom gives interviews.

Kroenke (pronounced KRONE-key) is one of the wealthiest and least known owners in professional sports. He's a Missouri-born (full name: Enos Stanley, after St. Louis Cardinals Hall of Famers Enos Slaughter and Stan Musial) real estate developer who's married to a Wal-Mart heiress. At the Waldorf, he looks trim and fit for 68 years old. He's wearing a dark suit, black tie, and white shirt with matching pocket square. His chevron mustache and sideways flop of hair are graying. At one point, in what passes for tweet-worthy news, he exits the restroom with Clark Hunt, owner of the Kansas City Chiefs and one of the members of the NFL committee overseeing the Los Angeles bids. As usual, he ignores the reporters. He didn't respond to multiple requests for comment on this story.

According to the website for his project, billed as the City of Champions Revitalization, Kroenke aims to turn a demolished horse racing track and parking lot in Inglewood, Calif., into an 80,000-seat stadium with a latticed open-air roof; an adjacent 6,000-seat arena; 1.7 million square feet of retail and office space; 2,500 residential units; and a hotel. To put the Rams there, he'll have to secure the approval of at least 24 of 31 of his fellow NFL owners and give a stiff arm to his native Missouri. Everything in Kroenke's past suggests he will find a way. "If it can get done, he'll get it done," says Jim Gordon, a longtime business partner. The move would almost instantly create one of the most valuable teams in football.

Kroenke's first attempt to land a franchise in the National Football League was a dud. In 1993, St. Louis was one of five cities bidding to become home to a new NFL team. A group of investors backing the St. Louis Stallions, as they planned to call the team, fell apart a few days before formal

Artists' renderings of the 80,000-seat football stadium Kroenke plans to build in Inglewood

presentations to the league owners in Chicago. Kroenke, then a little-known strip mall developer said to be worth a half-billion dollars, stepped in to lead the bid. He went before the owners with Richard Gephardt (D-Mo.), then the U.S. House Majority leader, Jack Buck, the play-by-play man for the St. Louis Cardinals baseball team, and Dan Dierdorf, who'd played for the St. Louis Cardinals—the NFL team—before they moved to Phoenix in 1988.

Kroenke's performance that day was memorably forgettable. "I don't even know that he said anything," Gephardt recalls. "He may have." A league source told the *Philadelphia Inquirer* that Kroenke was "evocative of the cartoon character Droopy Dog." The owners chose Charlotte, N.C., for a new team that day and, five weeks later, selected Jacksonville, Fla., for the second expansion slot.

The city of St. Louis then went shopping for a team to fill the domed football stadium it was already building. The Rams, who had been in Los Angeles since 1946, accepted a sweetheart deal to move in. Kroenke offered to purchase a stake in the team. The NFL approved the move in 1995, and he became

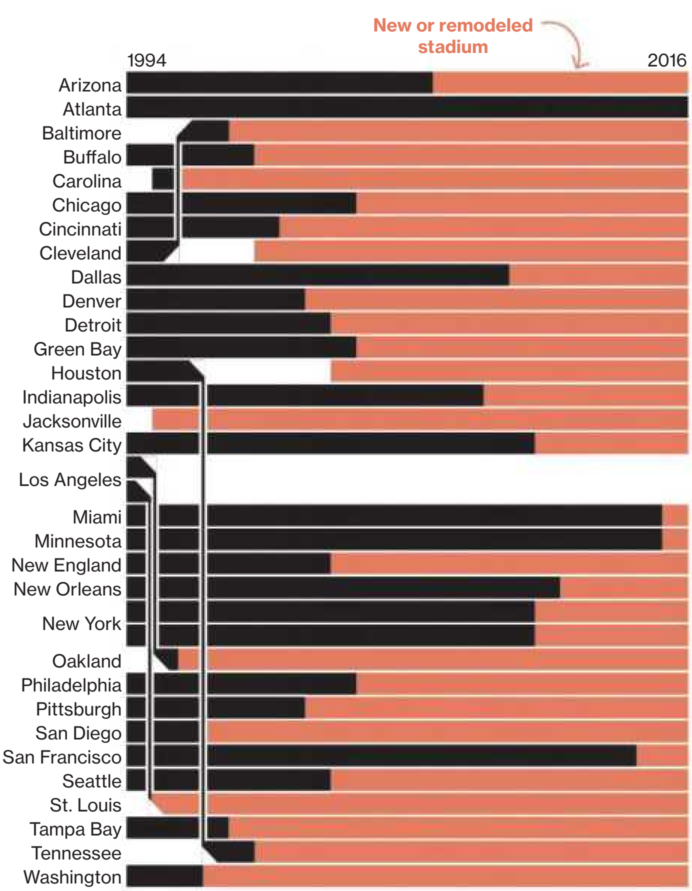
PREVIOUS SPREAD: PHOTO ILLUSTRATION BY 731; PHOTOS: AP (2); CORBIS; SUPERSTOCK; RENDERINGS: COURTESY HKS, INC.; DATA: ROBERT BAADE AND VICTOR MATHESON, PRO-FOOTBALL-REFERENCE.COM a minority owner. In 2010, after the death of longtime owner Georgia Frontiere, Kroenke exercised his option to buy the available 60 percent share of the franchise for $450 million. "It's exciting to be a 17-year overnight success," he joked at a news conference.

Kroenke, as the NFL learned, specializes in slogs. For him, deals are like fence posts. "You've just got to pound on them," Gordon recalls him saying. "You pound on it, pound on it, pound on it, and then all of a sudden it actually goes down." In this way, Kroenke has built a fortune worth $5.6 billion, according to Bloomberg estimates. It includes 20 million square feet of retail property, more than a million acres of ranchland, a pair of California wineries, and a sports portfolio to rival any in the world. Along with the Rams, Kroenke owns the National Basketball Association's Denver Nuggets, the National Hockey League's Colorado Avalanche, Major League Soccer's Colorado Rapids, and two-thirds of the English Premier League soccer club Arsenal—all separate from his wife Ann's $3.8 billion inheritance.

Stan met Ann on a ski trip to Aspen, Colo., in 1971. He was a student at the University of Missouri. She was in nursing school. His father ran a rural lumberyard. Hers was James "Bud" Walton, co-founder, with his brother, Sam, of Wal-Mart

THE NFL WILL TAKE ITS BALL AND GO

Every team but the Atlanta Falcons and Jacksonville Jaguars has built or renovated a stadium since the Rams moved to St. Louis, and Atlanta broke ground on a new home last year. Only New York and Miami didn't use public funds.



Stores. Stan grew up in Mora, Mo., a town of fewer than 500 people southeast of Kansas City. Ann was from Versailles, Mo., 25 miles east. They had never met until Aspen. They were married three years later. Bud, who handled the real estate side of Wal-Mart, brought Stan into the family business. He took his son-in-law on visits to potential sites and introduced him to Raul Walters, a Missouri developer who had helped build some of the company's earliest stores. "I chose to work for basically nothing to learn the business because I thought I would be good at it, and it turned out I was very good at it," Kroenke once told Bloomberg. In 1979, Walters and Kroenke became partners. Together they built 20 strip malls across the Midwest, many of them anchored by a Wal-Mart.

When Bud died in 1995, he left three-quarters of his 40 million Wal-Mart shares to Ann, his eldest daughter. That year, Stan took a seat on the Wal-Mart board. Under pressure from labor groups concerned about insider dealing, the retailer had begun disclosing its commercial relationship with Kroenke four years prior. By 2001, when Kroenke left the board and the disclosures stopped, he was the landlord for 55 Wal-Mart and Sam's Club stores. Over the decade, he collected $150 million in rents and fees from the company, always with the assurance that the price was "competitive with amounts that would be paid to a third party to lease similar space."

Curtis Barlow, a former lawyer for Wal-Mart's real estate division, thought otherwise about a 1991 deal with Kroenke to build a Sam's Club in Dallas. Barlow told the *Washington Post* that Wal-Mart was paying almost double market price for the space. "I just didn't feel that it was right, and being that was a publicly traded company, it shouldn't continue to treat family members with special concessions," he told the paper. Wal-Mart said it made a competitive deal. (Barlow, who left the company after the dispute rather than accept a demotion, declined to comment.)

David Glass, the chief executive officer of Wal-Mart from 1988 to 2000 and now owner of the Kansas City Royals, denies that Kroenke received any favorable treatment as a developer and says real estate wasn't discussed in front of Kroenke during board meetings. "In fact, because he was Bud's son-in-law, he got treated worse than the others," Glass says. "We held him to a more demanding standard simply because of who he was." Wal-Mart, he adds, benefited from Kroenke's skill: "He did a lot of the legwork and got us into areas ahead of when we could have gotten into them by ourselves."

Wal-Mart is a touchy subject for Kroenke. In the few interviews he's given over the years, he emphasizes the industrious habits he picked up as a child sweeping the shop floor at his father's lumberyard and the entrepreneurial chops he showed as a college student. In the late '60s, he started work at Ladigo of London, a clothing shop a few blocks north of the University of Missouri in Columbia that sold bell-bottoms and flowered shirts to students. Kroenke, by his account in the *Columbia Daily Tribune*, worked there as an undergrad, borrowed $2,000 from his father and MasterCard to buy a piece of the business, and sold it a couple years later at a profit.

"It's hard to challenge his business acumen," says Scott Rosner, a professor at the Wharton School at the University of Pennsylvania who's followed Kroenke's career closely. "That said, he has a significant advantage based on his family ties."

"I'm not going to argue with people who want to paint me with that brush," Kroenke once told the *St. Louis Post-Dispatch*.

In Denver, Kroenke bigfooted his brother-in-law, Bill Laurie, who's married to Ann's younger sister, Nancy. In 1999 the Lauries almost bought the Denver Nuggets, the Colorado

Kroenke with St. Louis Rams owner Georgia Frontiere after the team won the Super Bowl in 2000

Avalanche, and the Pepsi Center from Ascent Entertainment Group for $400 million. They'd already held a news conference announcing the purchase when it fell apart over a lawsuit filed by Ascent shareholders. Kroenke came in a year later with the winning $450 million bid.

When Kroenke first began buying shares in Arsenal in 2007, Peter Hill-Wood, then chairman of the London soccer club, tried to tell the Yankee to go home. "We don't need Kroenke's money and we don't want his sort," Hill-Wood said to the *Guardian*. "I don't know for certain if Kroenke will mount a hostile takeover for our club, but we shall resist it with all our might." Kroenke was undaunted by the Churchillian resolve and continued to snap up shares of the privately held club, becoming majority owner in 2011.

Kroenke frequently brings the with-us-or-against-us mentality of sports into his business relationships. He broke from his mentor Walters in 1985. It took the two nearly a decade in court to divide their holdings. Kroenke accused Walters of misrepresenting assets. Walters, who died in 2009, said Kroenke didn't do his share of the work. The pattern repeated with Michael Staenberg. Kroenke and Staenberg formed THF Realty (the acronym for "To Have Fun") in 1990 and, over the next 21 years, built more than 125 strip malls, about half with Wal-Mart as a tenant. The two split in 2011 and are in court in Missouri over how to divvy up an almost 20 million-square-foot retail empire.

Things ended poorly for Jim Alabach, who worked for Kroenke for 28 years, beginning as an intern in 1985 and eventually rising to development manager at the Kroenke Group. Alabach helped find land, secure permits, and build stores. When he decided to leave two years ago, he and Kroenke shared ownership in three buildings in downtown Columbia, Mo. In 2011, the two borrowed $5.4 million from a local bank to finance the properties. After Alabach left, according to legal filings in a dispute between the two, Kroenke stopped making payments and, instead of renewing the loan or agreeing to sell the buildings and pay it off, he bought the loan from the bank, declared default, and demanded that Alabach pay the remaining $5 million in debt, plus $250,000 in late penalties—hardball tactics that may prove perfectly legal. The money was inconsequential to Kroenke, but potentially ruinous for Alabach. Inflicting harm, Alabach alleges in a breach-of-contract suit, was the point. "You can't be in business with people like that," Alabach's attorney writes of Kroenke. Kroenke's attorney didn't respond to requests for comment.

"I don't know exactly what triggers those to make that happen," Gordon says of the ugly splits with Walters, Staenberg, and Alabach. Gordon, a Missouri native whose grandmother was a close friend to Sam and Bud Walton's father, Thomas, has worked with Kroenke for 30 years. He's a partner in dozens of strip malls and apartment complexes owned by Kroenke-Gordon-Schaller Properties. "He's always been a big brother to me and taught me a lot of things," Gordon says of Kroenke. "It's been cordial, and I hope it stays that way."

In St. Louis, the relationship between the city and Kroenke is all but over. When Mayor Francis Slay calls, Kroenke doesn't answer. "Every attempt we have made to contact him has been met with silence," says Slay's spokeswoman, Maggie Crane. Kroenke hasn't made any public comments about his plans for the Rams. The team didn't respond to requests for comment.

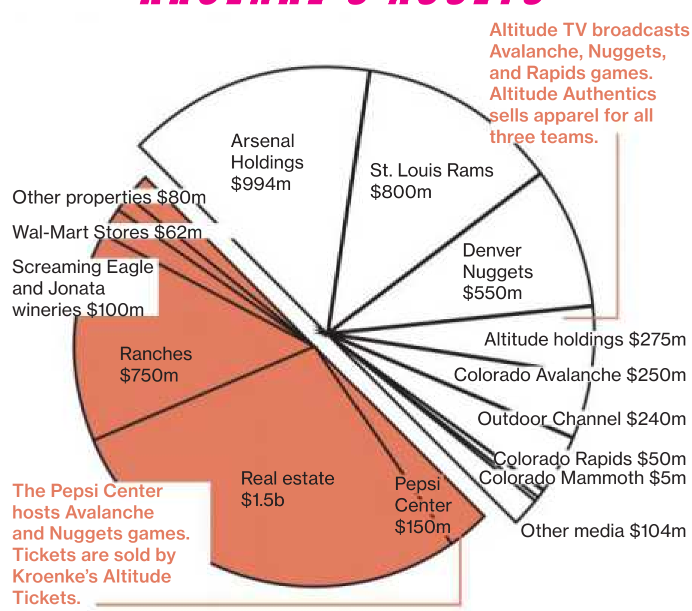
Missouri and St. Louis paid dearly to lure the Rams from Los Angeles in 1995. Through a joint city, county, and state body called the St. Louis Convention & Visitors Center (CVC), they funded the construction of the $260 million Edward Jones Dome and leased it to the Rams for just $250,000 per year. In the 30-year lease, the CVC promised to keep the stadium among the top quarter of facilities around the league by standards that allowed plenty of room for argument. Over the next two decades, all but two of the NFL's other 31 teams built or renovated stadiums. (One of the holdouts, the Atlanta Falcons, broke ground on a new home last year.) St. Louis, meanwhile, struggled to cover basic upkeep costs at Edward Jones.

As the deadline approached for a check on the stadium's standing on quality this spring, the city and team had very different ideas of what it would take to crack the NFL's top eight. Kroenke and the Rams proposed a $700 million renovation that called for a bigger footprint, a sliding roof, and a glass wall on one side. The CVC offered to cover half the $124 million cost of a new scoreboard and upgraded luxury seating. In February 2013, a panel of arbitrators said the city's plan wasn't enough to meet the standard. The CVC declined to pay for more, triggering an out clause in the lease. A year after the ruling, Kroenke alerted the NFL that he had bought a key 60-acre plot in Inglewood, Calif. Wal-Mart was the seller.

The L.A. stadium plan fits Kroenke's style. He likes to own teams the way he owns strip malls: from the ground up. "He certainly understands the adage that God isn't making any more land," says Marc Ganis, president of the consulting firm SportsCorp and a friend to many NFL owners, including Kroenke.

In Los Angeles, the Rams would be the centerpiece of a 300-acre mixed-use development. By Ganis's reckoning, that would

KROENKE'S ASSETS



DATA: COMPILED BY BLOOMBERG

"HE HAD TO WIN AT RUNNING. HE HAD TO WIN AT BASKETBALL. WHATEVER HE PLAYED, HE HAD TO ALWAYS WIN"

double the cash value of the franchise, which Bloomberg estimates to be worth $800 million in St. Louis. A large part of that windfall would have to be paid to the league's other owners, who are expected to collect a relocation fee in the hundreds of millions, either up front or through profit-sharing. The league, according to *SportsBusiness Journal*, also plans to collect a "flip tax" from any franchise that moves to Los Angeles and then sells within a set period.

The league aims to be ready to hold a vote among its ownership sometime in January, with the hope of moving a team or teams to a temporary venue in Los Angeles for the start of next season. That will require getting 24 owners to agree on whether to move two teams or one, how to fund a new stadium, which market or markets to abandon, and, trickiest of all, which of their fellows to back. "Anybody who tells you they know what it's going to be is simply blowing smoke," Ganis says. At the Waldorf, the owners spend the afternoon in a briefing from the league on Los Angeles. Like his rivals, Chairman Dean Spanos of the San Diego Chargers and Mark Davis of the Oakland Raiders, Kroenke has to leave the ballroom at the end of the day during the open discussion of their competing interests.

The NFL prefers to reward cities and states that help pay for their facilities and punish those that don't. For the past two decades, an empty Los Angeles has been a powerful bargaining chip for a small-market owner trying to extract concessions. Owner after owner, either openly or in veiled terms, has threatened to move there unless they get public money for a new stadium. Smaller cities, afraid of a blow to their self-image, usually go along. St. Louis and the state of Missouri, after saying no to Kroenke in a rare display of prudence, are scrambling to come up with $388 million to help build a $1 billion stadium for the Rams on the Mississippi riverfront. San Diego is likewise dangling $350 million in taxpayer money toward a $1.1 billion stadium. Oakland, so far, is offering nothing but the fervor of its fans.

Kroenke is in the awkward position of rooting against his home state's efforts to hand him money. His job is to convince other owners, especially the six-member Committee on Los Angeles Opportunities, that the St. Louis bid isn't viable and can be rejected without setting the wrong precedent. State legislators in Missouri are helping his cause by demanding that either they or the public get a chance to vote on the stadium proposal. Eric Grubman, the NFL executive overseeing the bid process, told reporters in November that he wasn't confident the St. Louis plan, as it stood, could win the support of NFL owners.

Charm offensives aren't Kroenke's strength. In the old boys' club that is the NFL, San Diego's Spanos carries greater sway. But Kroenke's deep pockets, and the simplicity of his plan, may win the day. Spanos and Davis are looking to share the L.A. market with each other. Kroenke wants it to himself. And he has the resources to finance a stadium with minimal debt load. The two-team plan comes with a bigger marketing challenge. "They would have to go out and sell season tickets at the same time and build a fan base and sell sponsorships," says Sal Galatioto, president of Galatioto Sports Partners, a consultant to franchises. On the flip side, two teams would play twice as many home games and share the burden of paying down the cost of a stadium, which Galatioto estimates will be about $40 million a year in debt service.

The only hint of Kroenke's prospects to come out of the proceedings at the Waldorf is news that the league had approved his plan to transfer ownership of the Denver Nuggets and Colorado Avalanche to his wife. When Kroenke became majority owner of the Rams in 2010, he got a temporary waiver from the NFL to maintain his stakes in the two Denver teams. The league forbids its owners from holding an MLB, NBA, or NHL team in a market where a competing NFL team operates. Denver Broncos owner Pat Bowlen, in this thinking, shouldn't be battling with Kroenke for mindshare in Denver. Since 2010, as a compromise with the NFL, Kroenke has let his son, Josh, speak for the Nuggets and Avalanche among NBA and NHL owners. Now Stan will also move his equity in those teams into his wife's name. His ability to hang onto his Denver teams reportedly had been a source of grievance among other owners. The transfer of the Denver teams to Ann might help mollify them, though it still leaves the elder Kroenke as the hidden hand there.

In November, the Spanos team named Walt Disney CEO Bob Iger as nonexecutive chairman of their stadium project. Disney, through ESPN, owns the rights to *Monday Night Football*, and Iger is a friend of Commissioner Goodell. In return for Iger's help, Spanos and Davis have offered him a chance to buy a stake in one of the two teams. Iger's tenure at Disney is scheduled to end in 2018, and he may need something to do. Iger brings deep connections in the sports and entertainment industries and precisely the sort of polish that Kroenke lacks. If Kroenke moves the Rams to the center of the celebrity-industrial complex—jilting his home state in the process—he will have to work harder than ever to stay out of the spotlight. Los Angeles, after all, is where the Clippers' new owner, Steve Ballmer, dances for the cameras at almost every home game. "There are a number of owners in professional sports who really like being in the limelight and being out front. And good for them if that's what they like," says Glass. "Professional sports are all about the players. It's not about ownership, and it's not about the front office or anything else. ... I share Stan's view on that."

Kroenke, who tried and failed to buy the Los Angeles Dodgers in 2012, seems to love winning more than he hates attention. In the summer of 1997, he was determined to dunk a basketball on his 50th birthday. "He would practice day in and day out for that," says a former business partner, who asked to remain anonymous. The 6-foot-2-inch Kroenke, who once scored a record 33 points for his high school team, did dunk on the day, according to the former partner: "He had to win at running. He had to win at basketball. Whatever he played, he had to always win." B —*With Matthew Boyle*

SCOTT ROVAK/USA TODAY SPORTS

TIME-SAVING HAIR TOOLS / PEPSI AND EMPIRE GO META / DOC HOLLYWOOD / HARD HAT AND HEELS

ETC

Walking Is Boring

The makers of this **$1,499 scooter want your** *commute to be totally rad*

By Kyle Chayka

Photograph by Giacomo Fortunato

Matt Waxman and Maxx Yellin careen into New York's Madison Square Park one gray weekday afternoon riding two-wheeled scooters that look like Roombas for your feet. Before they can even roll to a stop, Hugo Melo, a 21-year-old freelance developer and "aspiring founder," as he describes himself, points at their feet and asks, "What is that?"

"You want to try it out?" Waxman offers. Melo climbs up and perches uneasily while Waxman and Yellin support him on either side. He never quite gets going on his own, but he looks like he's having a great time. "This is way better than walking!" Melo says. "I definitely want one."

Yellin and Waxman get this all the time. The two are co-owners of PhunkeeDuck, makers of the $1,499 ... thing. A two-wheeled self-balancing scooter would be the most accurate way to refer to it. But most people have gone with "hoverboard" because of its resemblance to Michael J. Fox's preferred mode of conveyance in *Back to the Future: Part II*. (*BuzzFeed* suggests "nerdmover.") No matter who makes them, all hoverboards look pretty much the same: Recall a Segway, then subtract the awkward handlebars, shrink the wheels, and split the platform in two. Tilt both feet forward, and the whole board moves forward. Tilt only one, and it turns.

In May, model and *Keeping Up With the Kardashians* co-star Kendall Jenner posted a video of herself zipping around the house on a hoverboard. Skrillex used one in live performances. Cleveland Cavaliers player J.R. Smith rode one onto the court before a game. In late summer, rapper Wiz Khalifa was handcuffed at LAX for refusing to dismount his. By August, demand for hoverboards in the U.S. had increased by a multiple of 30, according to DHGate, a Chinese wholesaler. The London police recently outlawed them on public property—instantly ensuring their appeal.

Thanks to celebrities and social media, PhunkeeDuck (whose name was inspired by Waxman's 8-year-old brother, who likes to play Duck, Duck, Goose with hoverboards) has become the clear market leader when it comes to brand recognition, with 36,000 posts under its Instagram hashtag. "We haven't paid a dollar in marketing fees, so it's great," Waxman says. "Without Instagram, particularly, I can't say we would be where we are now. We were able to spread the word so fast." According to Yellin, the company's sales doubled from the first to second quarters of 2015.

Although they've done a good job of selling hoverboards, the pair didn't invent them. Waxman, 26, and Yellin, 25, met in high school on Long Island. In 2012, as college students, they started a company called PhunkeeTree, which designs custom iPhone accessories. While visiting one of their manufacturer's factories in China in October 2014, Waxman and Yellin discovered the board. "There was a manufacturer releasing this product and debuting it the week we were in China," Waxman says. "We didn't realize there would be that many knockoffs that quickly," Yellin adds.

In the U.S., PhunkeeDuck faces competition from brands such as Hovertrax, IO Hawk, and MonoRover, all of which are marketing essentially the same product. Patent infringement suits are flying back and forth, with various companies—including Segway—claiming ownership of the technology. While a successful lawsuit could make production exclusive to a single company, it's unlikely Segway will triumph, says Steven Crosby, a lawyer with the New York patent, trademark, and copyright firm Feldman Law Group. In fact, he says, all the legal action could wind up hurting Segway. "What if courts find that the claims that are being alleged as infringed are really invalid?" Segway's patents "appear to cover so much, but how much does it really cover when it's challenged in court?" Crosby asks. "These two-wheeled

"We haven't paid a dollar in marketing fees,

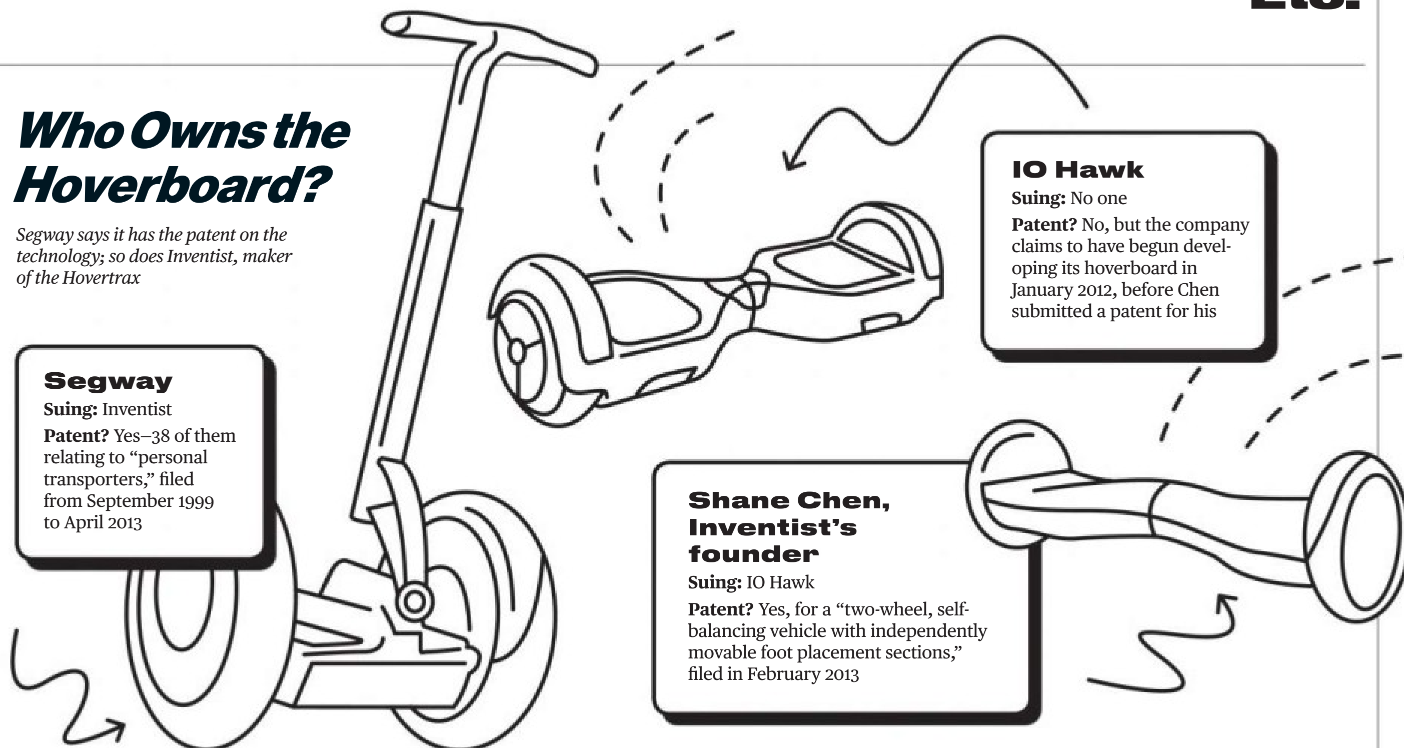
Viral Vehicles

PhunkeeDuck is winning on social media, with the help of celebrity friends

PREVIOUS: GROOMING BY REBECCA GARCIA; THIS PAGE: GETTY IMAGES (6)

Who Owns the Hoverboard?

Segway says it has the patent on the technology; so does Inventist, maker of the Hovertrax



Segway
Suing: Inventist
Patent? Yes—38 of them relating to "personal transporters," filed from September 1999 to April 2013

IO Hawk
Suing: No one
Patent? No, but the company claims to have begun developing its hoverboard in January 2012, before Chen submitted a patent for his

Shane Chen, Inventist's founder
Suing: IO Hawk
Patent? Yes, for a "two-wheel, self-balancing vehicle with independently movable foot placement sections," filed in February 2013

so it's great"

personal devices have been around for decades and decades."

PhunkeeDuck has so far avoided becoming the target of any lawsuit—not because its product is dramatically different, but because it hasn't made any claims to originality. Waxman and Yellin argued instead that their board is of higher quality than their competitors' products. At upwards of 20 pounds, PhunkeeDuck is definitely heavier and, they contend, more stable; its wheels are made of rubber, and its top speed is 10 miles per hour, vs. 6 mph for the Hovertrax. Still, if the other lawsuits succeed, the company will be equally vulnerable. The law prohibits the selling of "a component of a patented machine." Thus, PhunkeeDuck could also be forcibly shut down. "We have to try to figure out a way to coexist," Waxman says.

The two founders say their largest market is "regular adults" who use the machine to get around. These include Brett Kohan, 25, a freelance film production coordinator in New York. Inspired by Instagram, Kohan picked up a PhunkeeDuck. "I was sick of walking for 15 minutes after my subway ride," he says. "I charge it for a couple hours overnight next to my phone and hop on it in the morning."

Surfing a fad presents certain business risks, as anyone who remembers the Segway can attest. The press before its debut in late 2001 was ecstatic: It was going to revolutionize personal transportation, be as big an advancement as the automobile. They were going to design cities around it. In early 2002 inventor Dean Kamen predicted 50,000 to 100,000 Segway sales in the first year. Seven years later, the company claimed to have shipped only "over 50,000" total. That is, ever.

Hoverboards have already far surpassed Segway's sales. Almost a million were sold in 2014, according to Chinese market-research firm QY Research, before the social media boom. And though they're hardly cheap, they're more accessible than their predecessors. With a price tag of more than $5,000, a Segway is too expensive, says hoverboard owner David Jackson, 31, who invented a wallet that wraps around itself. "Also," he adds, "they're so dorky."

PhunkeeDuck's name might hold it back. "It's ridiculous," says David Coomer, chief creative officer at the branding agency Cornett. "You couldn't reach that market on a sustainable level with that name." Waxman and Yellin disagree. "Early adopters, they're marketing it for us," Yellin says. "When they ride it through the streets and people want to know what it is, they're going to say it's a PhunkeeDuck."

After Melo, our developer friend, finishes his session, I give the PhunkeeDuck a go. To mount it, first you have to step onto one side of the board, keeping your foot level so the motors don't kick in. Then you step up with the other, lean forward, and start moving. "It's about the consistent pressure. The harder you push down, the faster you go," Yellin explains as we roll through the park. Bystanders stare. The phenomenon is similar to seeing someone with Google Glass a year or two ago: The user seems either incomprehensibly advanced or just too silly to be socially acceptable. More likely the latter.

Waxman and Yellin don't care which, as long as the market maintains its enthusiasm. Mark Cuban recently approached PhunkeeDuck about a partnership. "He envisioned himself engineering the product himself and selling it to us," Waxman says, but negotiations stalled as the company sped past its competition. "We're going forward with our own engineering." For now, PhunkeeDuck is self-funded, but that may change. "We're going to be looking for investors at the beginning of next year," Yellin says. "Private investors and hedge funds have been calling."

Eventually, I get comfortable enough on the board to stop staring at the ground and waiting to fall, but by then I have to give the board back. Waxman and Yellin step onto theirs and speed off toward the park exit, chatting easily, their blue taillights glowing in the distance. Total pros. B

ILLUSTRATIONS BY 731

Speedy Stylers

We tested six multitasking hair tools that claim to shave precious minutes off your morning routine. By Allison P. Davis

CAJ BEAUTY VOLUMIZING DRYER BRUSH

$149.99; cajbeauty.com

This one says it will keep your arms from getting tired, but the low-quality bristles kept getting caught. You know what saps arm strength the fastest? Trying to free your half-wet hair from the barrel of a dryer brush.

Time saved: None, and *ouch*

REVLON PRO COLLECTION ONE-STEP HAIR DRYER AND STYLER

$49.99; target.com

Despite being as loud as a jet engine, Revlon's dryer had very little power. Still, the lightweight brush was easy to hold, and the end result was straight, no frizz.

Time saved: 30 minutes

CONAIR JOHN FRIEDA SALON SHAPE HOT AIR BRUSH

$37.05; walmart.com

Don't try using this thing as a blow-dryer: It will take about two months to get your hair dry. As a finishing tool, however, it was faster than a round brush and gave ends a nice bounce.

Time saved: About 10 minutes

HARRY JOSH 2-IN-1 CERAMIC MARCEL CURLING IRON

$175; dermstore.com

This acts as a standard curling iron—but it comes with an attachment to create old Hollywood waves. It was hot in under a minute and delivered high glamour in just over 15. This might be the Tesla of hair tools.

Time saved: 20 minutes at least

DRYBAR TRESS PRESS STYLING IRON

$150; thedrybar.com

The temperature control buttons were so confusing, it's possible the device wasn't set correctly. Regardless, it left hair pretty frizzy—not exactly the professional-level shine Drybar is known for.

Time saved: None

ROWENTA VERSA STYLE STYLING IRON

$129.99; bedbathandbeyond.com

All flat irons double as curling irons in a pinch, but Rowenta's has round edges to create a tighter curl. That's the idea, anyway—it never got hot enough to achieve a solid ringlet. Still, it did leave hair super straight, with a glossy finish.

Time saved: Not much

Market editor: Aja Mangum

PHOTOGRAPH BY JOSH DICKINSON FOR BLOOMBERG BUSINESSWEEK

NOT ENOUGH COOKS

The restaurant industry is in a talent crisis. Its solution: Company-sponsored yoga
By Elizabeth G. Dunn

Joe Kindred's cooking career has taken him through top kitchens in San Francisco and Chicago, but when he decided to open a place of his own, the chef passed up big-city fame to return to his sleepy hometown of Davidson, N.C., a suburb of Charlotte. His restaurant, called Kindred, has become a critical darling (one of the best new restaurants in the U.S. this year, according to *Bon Appétit*) and an instant local hit. As much as that success draws from the restaurant's stunning historical location and its use of local ingredients, Kindred says, it really comes down to the quality of the kitchen staff—and his ability to hang on to them.

For the past several years, restaurant owners have been facing a major shortage of good cooks. The problem is especially pronounced in New York and San Francisco, where the high cost of living has young culinary professionals fleeing to more affordable locales. The growing number of ambitious restaurants outside traditional hubs has spread the deficit nationwide. Fine-dining restaurants are a low-margin business, so rather than try to compete on wages, employers have had to come up with more creative ways to make their cooks stay.

"I've closed the restaurant for lunch in order to take the team out back and play dodgeball, when I can tell they really need it," Kindred says. He and his wife, Katy, who's a partner in the restaurant, also established the Big F---ing Cookie Award, given with great fanfare each week to a staff member who's gone above and beyond the call of hospitality. "We have 150 seats and everybody eating small plates, so there's no way a single chef can touch every single thing that leaves the kitchen," Katy says. "Whether or not your cooks care makes or breaks a person's dining experience."

The Kindreds' efforts may sound like small potatoes compared with the lavish perks offered by Silicon Valley startups (Zen meditation rooms; on-site gaming arcades). But a focus on job satisfaction represents a change for the hospitality industry, which traditionally has taken a hard-knocks approach to employment practices, as any casual viewer of *Hell's Kitchen* knows. Even benefits such as health insurance, 401(k)s, and paid time off—standard stuff for your average office worker—are still far from universal in the restaurant world.

Now workers have the upper hand. A survey conducted this summer by Culinary Agents, a networking and job-matching site for the hospitality industry, showed that career development was of particular concern to kitchen and dining room staff considering potential employers. To keep his up-and-coming cooks happy, Tom Colicchio's Crafted Hospitality group has instituted such programs as the Sous Chef Supper series, where they can introduce original dishes to the public. Others are making it easier for their cooks to stay healthy: Chef Tony Maws of Craigie on Main in Cambridge, Mass., offers company-sponsored yoga classes for employees. At SPQR in San Francisco, executive chef Matthew Accarrino has led his kitchen staff on bike rides up to Napa Valley to visit the restaurant's partnering farm.

What it all boils down to is fairly simple, says Adrian Giovanelli, executive chef of Roaring Fork restaurant in Austin. "The crazy yelling, screaming, and shouting doesn't resonate with this generation," he says. "You can't be a tyrant anymore." Ⓑ

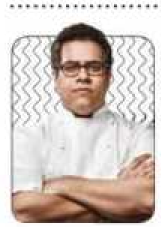
Pack Your Knives

THE KITCHEN EXODUS

The New York restaurant world has seen a number of high-profile defections recently. Here are five of the biggest losses.

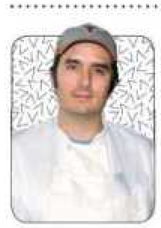
Gavin Kaysen
Used to be executive chef at Daniel Boulud's Michelin-starred Café Boulud. **Left for** Minneapolis, his hometown, where he runs Spoon and Stable, focusing on seasonal Midwestern ingredients.

Peter Serpico
Used to be director of culinary operations for David Chang's Momofuku empire. **Left for** Philadelphia to open his own restaurant, Serpico, serving contemporary American cuisine.



Michael Toscano
Used to be executive chef at Perla, one of *Esquire*'s best new restaurants of 2012. **Left for** Charleston, S.C., where he's planning to open a restaurant of his own next year.

Matthew Lightner
Used to be chef at Tribeca's high-concept Atera. **Left for** Napa Valley, where he opened Ninebark, serving casual, market-driven California cuisine.



Gabe Thompson
Is executive chef of Epicurean Group, which runs Dell'anima, L'Artusi, L'Apicio, and Alta Linea. **Leaving for** Washington, D.C., along with his wife, pastry chef Katherine Thompson, a D.C. native.

ILLUSTRATION BY BRANDON CELI. TOSCANO: DALE MAY. SERPICO: JASON VARNEY. GETTY IMAGES (3)

MUST-SEE ADVERTISING

Pepsi and Empire *put the commercial right in the show*
By Felix Gillette

The biggest guest star to appear on the second season of Fox's hit hip-hop drama, *Empire*, isn't an actor, a musician, or even a politician doing a cameo. It's a cola.

Nov. 18 marked the beginning of a three-episode storyline for Pepsi, the brand and the beverage. In the first episode, Jamal Lyon, middle son of fictional entertainment mogul Lucious Lyon, is trying to shore up his status as a full-blown pop star and takes a meeting with Pepsi executives to discuss becoming the face of the brand; he generates a fresh new track (created in real life by producer Swizz Beatz) to impress the team; Pepsi loves it. In the second episode, Jamal films his Pepsi commercial, which is directed by Lee Daniels, the Oscar-nominee behind *Precious*, *The Butler*, and–oh, yeah–*Empire*.

The narrative culminates with the debut of Jamal's Pepsi commercial on Dec. 2, right before *Empire* goes on a three-month hiatus. On the show, the spot will air at a press conference; when the ad is shown to the assembled characters, Fox will go to commercial–and show the same ad in reality. "You have a real brand anointing a fictional artist in a commercial directed by the creator of the series appearing as himself," says Steven Melnick, a senior vice president for 20th Century Fox Television, the studio that makes *Empire*. "It's very meta."

It's also an accurate portrayal of what counts for making it in the pop world. "There are three things that happen where you know you're on your way," Jussie Smollett, the 32-year-old actor who plays Jamal, says during a break

Smollett (aka Jamal Lyon)

PHOTOGRAPHS BY ANDREW HETHERINGTON FOR BLOOMBERG BUSINESSWEEK

A shot (within a shot)

WAIT, WHAT?

A primer to help you keep track of what's going on

REALITY FICTION BOTH

Lee Daniels creates a TV show called *Empire* and casts Jussie Smollett as Jamal Lyon, the middle son of Lucious Lyon, creator of the fictional hip-hop label Empire.

Jamal becomes a huge pop star on Empire. Smollett is the breakout heartthrob from *Empire*.

Daniels approaches Pepsi about doing a commercial on *Empire* that works into the story of Empire.

Jamal becomes a Pepsi spokesman and films an ad for the brand. So does Smollett.

Daniels directs Jamal's Pepsi commercial on *Empire*, which is also Smollett's Pepsi commercial, which Daniels also directs.

Jamal's Pepsi ad premieres at a press conference for Empire, which is also an ad break for *Empire*.

Smollett's soda spot comes out. Pepsi is happy.

GETTY IMAGES (2), PEPSI (1)

from filming the climactic spot. "Having a No. 1 album. Winning a Grammy. Doing a Pepsi commercial." Over the years, everyone including Michael Jackson, Madonna, and Beyoncé has starred in a Pepsi ad. That authenticity, he says, is crucial. "There's no Pepsi placed perfectly right there as I'm doing a dramatic scene. It's not corny."

Product tie-ins have been around since the dawn of television. But these days the bar for what's effective is high. "As viewers get more sophisticated at screening out ads, marketers need to get much more creative in how they link to content," says Allen Adamson, the founder of BrandSimple Consulting. More often, that means bespoke storylines. In 2010 the ABC sitcom *Modern Family* aired an episode that revolved around a character getting an iPad. Three episodes, though, is something else.

MICHAEL JACKSON, MADONNA, AND BEYONCE HAVE ALL DONE PEPSI ADS

Empire's writers came up with the idea of Jamal's cola coronation and then approached Pepsi, executives say. The brand won't reveal how much it's paying Fox, but traditional 30-second ad slots—which generally cost far less than a deeply entwined brand integration—are going for about $500,000 this season, according to *Advertising Age*. Pepsi put $149 million into U.S. advertising alone last year, research firm Kantar Media says.

On a Monday afternoon in early November, Pepsi and *Empire* producers gather at the decommissioned subway station that's home to the New York Transit Museum to shoot the commercial. Smollett, as Jamal, steps onto an erstwhile subway car populated with commuters. A guy looks up, recognizes Jamal, and tosses him a Pepsi. Jamal takes a swig and smiles. Swizz Beatz's beats kick in. Suddenly, everyone's dancing. From nearby, Daniels fine-tunes the joyous gyrations.

Farther down the platform, Pepsi marketers watch the scene on a pair of monitors, passing notes to Daniels. Not surprisingly, they seem to want Jamal to linger a bit longer on the transformative sip of soda. To ensure the ad enjoys a life beyond *Empire*, they stage a couple of takes with Smollett as himself, a rising TV actor, rather than as Jamal Lyon, the rising fictional pop star.

Regardless of the commercial's future, Smollett is excited for his character. He says Jamal—who proudly came out as gay during the first season, despite his father's objections—is the perfect ambassador for Pepsi's hip, young, culturally inclusive brand. Besides, pretty much every other character on the show is an emotional lava fountain. "None of the other Lyon family members would be able to do it," Smollett says. "Pepsi isn't going to endorse their crazy selves." Ⓑ

WILD GOES HOLLYWOOD

When did eco documentaries get so slick? By Caroline Winter

In an early scene of the documentary *Racing Extinction*, undercover agents infiltrate a trendy restaurant in Santa Monica, Calif. Using hidden cameras, they capture a waiter serving endangered whale sushi. "Three pieces, we got it," says Louie Psihoyos, the marine activist who's parked outside monitoring the sting. "It's a bingo."

Psihoyos, who won an Oscar in 2010 for his documentary *The Cove*, is the film's director and Anthony Bourdain-like main character. With a team of activists, he travels the globe interviewing experts and uncovering wildlife smuggling. Beautifully shot, the film details how man-made pollution, overfishing, and poaching of endangered animals and sea life could wipe out up to half the world's species within 100 years. On Dec. 2 the Discovery Channel will air *Racing Extinction* in 220 countries and territories.

Once synonymous with musty, eat-your-vegetables schoolroom fodder, documentaries are fast becoming the environmental movement's medium of choice. The latest replace bleak lectures with Hollywood production values and edge-of-your-seat storytelling. *Racing Extinction* has an urgent but hopeful message—not to mention an original soundtrack starring Sia and Antony Hegarty and a marketing campaign that would rival a summer blockbuster.

Racing Extinction is part documentary, part thriller. Psihoyos's team poses as culinary tourists to film warehouses stocked with thousands of shark fins. They profile an Indonesian village where the primary income is from overfishing manta rays, a species in fast decline. Like Hollywood's best, the film plays on our heartstrings, but it also works hard not to demoralize viewers into fatalistic apathy. Throughout, Psihoyos visits activists, scientists, and entrepreneurs—from Jane Goodall to Elon Musk—who've helped change laws, stop illegal trade, and provide clean-energy alternatives.

AFTER *AN INCONVENIENT TRUTH*, PEOPLE BOUGHT PRIUSES

The movie is easier to stomach than *The Cove*—intentionally so. That film exposed the slaughter of thousands of dolphins off the coast of Japan in grisly detail. "A lot of people are still afraid to watch *The Cove*," says Fisher Stevens, who co-produced both films. "*Racing Extinction* is more accessible."

Technology has aided filmmakers such as Psihoyos: In an age of GoPros and Inspire drones, it's easier to shoot stunning nature footage or risky covert operations. Technology also affects distribution: What used to be restricted to IMAX or art-house movie theaters and PBS is now a mainstay of Netflix, sites such as *Vice*, and hundreds of nonfiction cable channels hungry for content.

"We were surprised to find that people have a real appetite," says Jennie Morris, an executive vice president at Pivot, an issue-based TV network now in 50 million homes. "Environmental and water issues really pop," she says, though she won't share the network's viewer numbers.

Eco flicks date back to the 1930s, when the Roosevelt administration hired activist Pare Lorentz to make topical films to play in theaters alongside Hollywood features. In the following years, audiences would be captivated by Jacques Cousteau, Marlin Perkins, and IMAX movies at the museum, but many of those projects celebrated the beauty of nature without engaging in the controversy surrounding its preservation. Activist films didn't take off with the general public until 2006, when Al Gore released *An Inconvenient Truth*. "It was a game changer," says Betsy McLane, author of the second edition of *A New History of Documentary Film*. "People actually went out and bought Priuses."

Post-*Truth*, CNN aired *Blackfish*, about SeaWorld's abuse of killer whales. About 21 million tuned in. (As a result of the outrage, SeaWorld in November announced it will phase out orca shows in San Diego.) *Years of Living Dangerously*, an Emmy Award-winning Showtime series about climate change, is set for a second season. And National Geographic recently aired *Bill Nye's Global Meltdown*, in which the Science Guy confronts the "five stages of climate change grief."

In *Racing Extinction*'s finale, Psihoyos teams up with artist Travis Threlkel to project giant images of endangered wildcats, wolves, and whales on the Empire State Building and other locations. We see throngs of people caught off guard, staring at the illuminations as Sia sings, "Better to light one candle than curse the darkness." Psihoyos's intentions are clear: We still have a chance, he says, "if you can show people the beauty of these things." Ⓑ

ILLUSTRATION BY GIACOMO BAGNARA

MARYANNE GILMARTIN

51, president and chief executive officer, Forest City Ratner, New York

Describe your job.
I run a real estate development company. We build large-scale, complex urban development projects like the *New York Times* headquarters, the New York by Gehry tower, and the Barclays Center. If it's not hard, we're probably not interested.

What do you wear to construction sites?
I never go on a site without a hard hat—and high heels. I'm head of a company, and I can break a few rules.

How'd your style help you get to your position?
I think it's not being afraid to express femininity and being confident in wearing dresses and heels.

What's your hair strategy?
I get it blown out three times a week. Hair's a very big deal for me, because when I was 13 I had an Afro, and I'm an Irish gal from Queens. That wasn't easy.

Do you always wear the same jewelry?
The Love Bracelet can only be taken off with a key, so I've missed a couple of planes. My son got it with me.

Why this dress?
Alexander McQueen's dresses are both professional and mildly provocative. They're cut pretty close, and I'm not afraid to work what I've got.

Where will this outfit take you today?
I did school drop-off, had a 9 a.m. executive meeting, and I'm headed to a lunch for *Crain's* 50 Most Powerful Women in New York. Then I'll run to a factory tour at 4:30 p.m.

Pantyhose or no?
No. In real estate, I was probably a pioneer in that. I will show up in the depths of winter in either opaque Wolford tights or nothing.

PHOTOGRAPH BY B. O'BRIEN FOR BLOOMBERG BUSINESSWEEK

Interview by Arianne Cohen

How Did I Get Here?

VAL ACKERMAN

Commissioner, Big East Conference

"I was salutatorian and had 10 varsity letters, in field hockey, basketball, and outdoor track."

Education

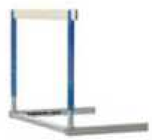
Hopewell Valley Central High School, Pennington, N.J., class of 1977

University of Virginia, Charlottesville, class of 1981

UCLA School of Law, class of 1985

"In my first year, I split the one and only scholarship for women's basketball. This was five years after Title IX."

Playing small forward for UVA, 1978



Tossing the ceremonial ball at the inaugural WNBA game, 1997

Work Experience

1981
Professional basketball player, Union Cosnoise Sportive Basket, France

"I learned a little French, got to see the world, earned a little money. I'd do it over again in a heartbeat."

1985–87
Corporate and banking associate, Simpson Thacher & Bartlett

1988–96
Staff attorney, vice president for business affairs, NBA

"I worked on the 1992 Dream Team—Magic Johnson, Larry Bird, Michael Jordan, Scottie Pippen, Patrick Ewing—probably the finest basketball team ever put together."

1996–2005
President, WNBA

With Margo Dydek at the WNBA draft, 1998

"It was the job of a lifetime. The first year, we projected average crowds of 3,000, and they were closer to 10,000. And the players were such appealing role models."

2005–08
President, USA Basketball

With George W. Bush at the Olympics, 2008

"Leaving [the WNBA] was hard, but I wanted to spend more time with my daughters. The experience culminated with gold medals for both men and women at the Beijing Olympics."

2008–13
Columnist, espnW; consultant, NCAA

2013–Present
Commissioner, Big East Conference

"Seven schools pulled out of the old Big East league and started their own. It was 100 percent a startup: new staff, office, website. We now represent more than 3,000 student athletes in 22 sports."

Presenting the Big East championship trophy to Providence coach Ed Cooley, 2014

Life Lessons

1. "Ninety percent of life is about showing up." **2.** "No matter how much you want it, there's always someone who wants it more." **3.** "You just have to work harder."

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124430 10/15

The American Red Cross responds to a home fire or other disaster every 8 minutes.
Photo: Talia Frenkel/American Red Cross

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Twelve percent of the adult homeless population are veterans. The New England Center and Home for Veterans works to combat this epidemic by providing housing and support services.

They wanted to expand their facilities to aid more veterans. Citi's expertise in working with government and community organizations put the bank in a unique position to help arrange and provide the needed financing. Once the renovations are completed, the Center will better serve the needs of female veterans and help more people to find jobs and homes of their own.

For over 200 years, Citi's job has been to believe in people and help make their ideas a reality.

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