SPECIAL: THE INSIDE STORY OF CHATGPT

BLOCKCHAIN 50: SURVIVORS AND THRIVERS

OFF-THE-SHELF NUCLEAR POWER

BEER'S BOOZELESS BENDER

FINTECH'S WALKING DEAD

Forbes

Project Black Creator
MELLODY HOBSON

"PEOPLE TALK ABOUT ACCESS TO CAPITAL, BUT ACCESS TO CUSTOMERS MAY BE MORE IMPORTANT."

CAPITALISM FOR ALL

EXCLUSIVE: A NEW BLUEPRINT FOR MAKING AMERICAN BUSINESSES LOOK MORE LIKE AMERICA—FOR GOOD

Forbes

February/March 2023

Volume 206 | Number 1

INSIDE

MELLODY HOBSON BY JAMEL TOPPIN FOR FORBES

GREG BROCKMAN BY ETHAN PINES FOR FORBES

February/March 2023

ON THE COVER

MELLODY HOBSON
Photography by Jamel Toppin for Forbes
Makeup: *Mark Payne*
Hair: *Christol Williams*
Cover Wardrobe: *Maison Rabih Kayrouz*
Yellow Background Wardrobe: *Erdem suit & Duncan shirt*
Tailored *by Ikram Goldman, Ikram Chicago*


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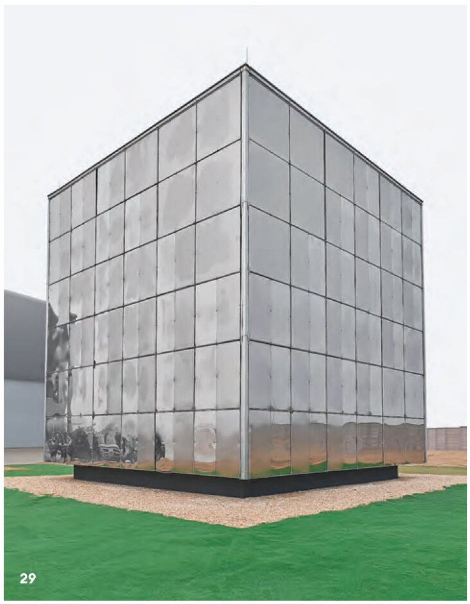

SPECIAL SECTION

BENNETT ROSENTHAL BY TIM TADDER FOR FORBES; BENEDICT REDGROVE FOR FORBES; ILLUSTRATION BY MICHAEL HOEWELER FOR FORBES

SIDELINES

Forbes On Demand

When I was a young writer at *Forbes* in the 1990s, the solution when a good story ran a bit long was simple: Shrink the photos. The words always reigned supreme. Fast-forward a few decades. Our words remain sacred, especially in the printed form, where physical constraints impose judicious curation. But we embrace world-class journalism through pretty much any storytelling platform, from photo essays to Instagram posts, punchy email newsletters to gripping live events.

(From left) C.W. Benston, Joshua Fidler, Kirsten Taggart, Tim Pierson, Travis Collins, Ivan Clow

Increasingly, we're seeing people interact with *Forbes* via video, one of the great success stories here over the past few years. The formula: Hold ourselves to the highest standards and meet our audience wherever they view, whether on our own site, a streaming platform, social media or YouTube. "People now trust *Forbes* with moving images the same way they do with the written word," says Tim Pierson, a 10-year *Forbes* veteran who deftly oversees our video operation.

Indeed they do. People have watched a *Forbes* YouTube video more than 1.5 *billion* times over the past two years. Says Pierson: "The buy-in from the newsroom is key." Lead anchor Brittany Lewis provides contextual news updates throughout the day. Diane Brady, one of the planet's best business interviewers, goes further, with smart takes from billionaires, CEOs and *Forbes'* expert journalists. We have another dozen people focused on deep-dive segments, such as bringing signature *Forbes* lists to life. And our VP of social and emerging media, C.W. Benston, makes sure that these videos reach the right audience on all possible platforms.

The connective string: upholding quality and staying true to *Forbes*, the leading voice of entrepreneurial capitalism for over a century. When Forbes Entertainment, under Travis Collins, started delving into feature-length documentaries, the first production was *WeWork: Or the Making and Breaking of a $47 Billion Unicorn*. That documentary, which streamed on Hulu, just won *Forbes* its first Emmy Award.

Quality always wins in the long term, and we strive to deliver that to you in as many formats as you choose.

—**RANDALL LANE,** CHIEF CONTENT OFFICER

Forbes

February/March 2023 • Volume 206 | Number 1

ALEXIS NORIEGA FOR FORBES

By **Steve Forbes, Editor-in-Chief**

The Scandal of Alzheimer's

Why is there no cure for Alzheimer's—or why aren't there medications that can at least substantially slow or meaningfully ameliorate the disease? It afflicts more than 6 million Americans, with that number on its way to doubling within a generation.

Alzheimer's is a hideous ailment for both the sufferers and their families and friends. Yet even though the disease was first diagnosed by psychiatrist Alois Alzheimer in the early 1900s, progress in fighting it has been almost nonexistent. What's scandalous is that for decades research has been almost entirely focused on the wrong hypothesis.

Dr. Alzheimer noted in the autopsy of the patient's brain with the disease that came to bear his name that it was densely loaded with two proteins called plaques and tangles. Unfortunately, the dominant thesis in research on the disease has been that attacking plaques, and to a lesser extent tangles, would cure the ailment and enable the brain to regain its health.

Alzheimer himself warned about focusing too much on plaques and tangles as causes. In fact, some sufferers of Alzheimer's have proved to have had little in the way of plaques, while others who had plaques didn't have the disease.

Nonetheless, despite constant failures—some 20 drugs have been developed that ended up as flops—and the expenditure of tens of billions of dollars, the main thrust of research remains focused on fighting plaques.

The obsession with this dead-end approach has been fanatical, almost cultlike. Researchers who want to pursue more promising avenues have faced serious obstacles. Rarely has chronic failure resisted correction on something so important.

You may have heard of a new drug called lecanemab, which is being heralded as a fantastic breakthrough. But lecanemab is based on the wrongheaded plaques hypothesis. As noted health policy journalist Joanne Silberner sadly points out, "At best, lecanemab might slightly slow a patient's inevitable decline for a few months."

This research scandal shows the danger of groupthink, particularly when there's a powerful government agency such as the National Institutes of Health putting the kibosh on grants for nonconsensus projects.

A classic case of similar groupthink involved the cause of stomach ulcers. The once-prevailing view was that stress and lifestyle were the cause, and drugs and regimens were developed on that belief.

This dogma was challenged by two Australian physicians, Robin Warren and Barry Marshall. They posited that the villain was bacteria and that antibiotics were the answer for a permanent cure. When not ignored, their discoveries were derided. Only after many years and constant, sometimes unorthodox advocacy, especially by Dr. Marshall, did the medical world accept their truths. The two were eventually awarded the Nobel Prize in Medicine.

In the case of Alzheimer's, the rigid research mentality has begun to soften, but only slightly. To attack this deadly rigidity, Congress should hold hearings on the subject, starting with the leaders at the National Institutes of Health.

Ukraine: There's No Substitute for Victory

The disgraceful dithering—especially by Germany—over sending tanks to Ukraine highlights the hesitation and confusion over what's at stake in this war with Russia. Since the conflict's beginning, the U.S. and NATO have provided Ukraine with weaponry, but never in sufficient quantity and quality to win. This hesitation has only stiffened Vladimir Putin's conviction that despite humiliating battlefield setbacks, he can ultimately triumph, and that as time goes by, the West will tire of the effort and pressure Kyiv into a bad deal.

In Putin's mind, the best way to achieve the subjugation of Ukraine is to use the same approach that Russia used against Nazi Germany in World War II, when the Red Army relied heavily on massive artillery barrages, tank attacks and unrelenting human wave attacks to beat back the Nazi onslaught—which is why Russian casualties were more than ten times those of the U.S. and Britain combined.

Putin is playing for keeps. Russia and our other adversaries still see the U.S. as a country in terminal decline and lacking the stamina it exhibited during the Cold War. Therefore, we should be supplying Ukraine with everything it needs to unmistakably defeat Putin. That means not only many more tanks—especially Germany's Leopard 2s, which are better suited to the terrain than our Abrams tanks—but also fighter aircraft, including F-16s, antitank and advanced antiaircraft weaponry, drones and much else.

RESTAURANTS: GO, CONSIDER, STOP

Edible enlightenment from our eatery experts and colleagues Monie Begley, Richard Nalley and Randall Lane, as well as brothers Bob, Kip and Tim.

Music may be the food of love, as Shakespeare put it, but food can work magic of its own, especially when shared in romantic surroundings augmented by candlelight, a flickering fire, soft piano music or a panoramic view of city lights twinkling to the far horizon. Here's a baker's half-dozen of our favorite, most enthralling and romantic dinner destinations in New York City.

—Richard Nalley, *Forbes* contributor

♥Majorelle

28 East 63rd St. (Tel.: 212-935-2888)

An oasis of high-luxe serenity off Madison Avenue, Majorelle's personal-scale rooms with their graceful crown mouldings and exuberant floral arrangements are among the loveliest in the city. (Extra romance points if you're able to score a table in the skylit garden space.) The service is silky, welcoming and impeccable. The menu of French classics, with a nod toward Morocco, is highlighted by the perfect and nostalgic poulet rôti "grand-mère," surrounded by potatoes, mushroom and bacon; and the darkly meaty lamb tajine with prunes.

♥One if by Land, Two if by Sea

17 Barrow St., between West 4th St. & Seventh Ave. South (Tel.: 212-255-8649)

This Village mainstay, housed in Aaron Burr's 1767 carriage house, makes the impossible-to-verify but not-impossible-to-imagine claim of having hosted more marriage proposals than any other venue in the city. The setting does impress, especially on a winter's night, with its fireplaces and tiers of chandeliers blazing in the low light and the pocket garden glimpsed outside the arched windows, illuminated in the snow. The very pricey ($150 prix fixe) menu is satisfying enough—the signature beef Wellington delivers, as does the Asian-inflected colossal crab—but the cuisine is not the magnet here.

♥Le Coucou

138 Lafayette St., between Howard & Canal streets (Tel.: 212-271-4252)

Step in off one of SoHo's less-traveled blocks and feast your eyes on Le Coucou's breathtaking, chandelier-lit, secret loft space and its chic, gussied-up clientele. There's plenty more to feast on here as well, thanks to American-celebrity-chef-in-Paris Daniel Rose's playful takes on French dishes high and low, such as the pillowy sweetbreads and the meaty, complex bites of filet Basquaise, with its refined gravy, foie gras and ham.

♥The Nines

9 Great Jones St., between Broadway & Lafayette St. (Tel.: 212-421-5575)

This spot is a riff on an old-school supper club for the cool crowd of a new generation. Step through the velvet curtain and emerge onto a movie-set vision of a sexy, vibey '40s nightclub, complete with crimson walls and barstools, a crooning piano player and patrons' faces softly illuminated in the twilight by table candles. The short menu includes refined signature cocktails and a roster of genuinely satisfying grownup fun foods, such as Scottish smoked salmon and blini, and Kaspian potato with Osetra caviar.

♥Manhatta

28 Liberty St., between Nassau & William streets (Tel.: 212-230-5788)

The restless, striving city pulses 60 floors below, a shimmering carpet of lights stretching as far as the eye can see. But this hushed aerie in the Financial District isn't just counting on your gaping out the windows—what's inside is pretty great, too: a spare, elegant, high-ceilinged room with well-spaced tables and on-point, effortless service, Danny Meyer style. The food truly doesn't have to be this good, but it's worth the trip itself—including the tête de cochon, with its maple-cured trout roe and peanuts (!); the tart/creamy/briny oysters Manhatta; and the float-off-your-plate chocolate sabayon.

Le Coucou

One if by Land, Two if by Sea

♥The Waverly Inn

16 Bank St., at the corner of Waverly Place (Tel.: 917-828-1154)

Is there a more inviting winter restaurant space in the city than this dark-paneled, low-ceilinged series of tavern rooms with their crackling fireplaces and cheeky murals of the last century's literary and artistic A-listers? The place feels intimate and dislocated in time, a kind of long-running New York fantasy of relaxed, insidery sophistication. The pricey fare has a clubby, any-era feel as well, including the famous cheeseburger, the richly stuffed Baltimore crab cakes and the luscious two-way (roast and confit) duck.

♥Temple Court

The Beekman hotel, 5 Beekman St., between Theatre Alley & Nassau St. (Tel.: 212-658-1848)

It took sure-footed chef Tom Colicchio a couple of tries (and the cessation of the pandemic) to nail this landing, but the 2023 version of the restaurant and its elevated American standards menu is truly worthy of its eye-popping surroundings in the 1883 Beekman hotel. Outside the arched doorways is the bustling gold-and-green library-like bar and the hotel's mesmerizing nine-story Victorian atrium. Inside, beneath gorgeous, Klimt-like stained-glass panels, the darkened space is dialed-in for seductions, business or personal.

COURTESY OF ONE IF BY LAND, TWO IF BY SEA; CORRY ARNOLD

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Marvelous

LAFC co-owner Bennett Rosenthal has Captain America to thank for his love of soccer. The financier stepped in to run his daughter's team after another parent, Marvel director Joe Russo, left to shoot the superhero film.

SportsMoney

GOLDEN GOALS

Months after winning the 2022 Major League Soccer Cup, the Los Angeles Football Club is MLS' first billion-dollar franchise. And with more than a dozen billionaire owners in the league, it won't be the last.

BY JUSTIN BIRNBAUM. TIM TADDER FOR FORBES

At the Los Angeles Football Club's University Hills training facility, some 10 weeks after winning its first Major League Soccer title in a thrilling penalty shootout, co-owner Bennett Rosenthal is still processing his team's spectacular season. "It's a life experience that you don't expect," the 59-year-old says. "I think we're all still smiling every day."

Now Rosenthal has something else to celebrate—*Forbes* estimates that LAFC is worth $1 billion, just nine years after it joined MLS for an expansion fee of $110 million, making it the league's first billion-dollar franchise. That's more than double the $475 million *Forbes* determined it was worth in 2019, the last time we assessed North American soccer teams.

That's an impressive return, but not one Rosenthal was banking on. "We did not do this because we thought it was the best place to put our capital," says the cofounder of the $341 billion (AUM) Ares Management *(see page 32)*, who made his fortune finding profitable alternative investments. "We thought it could be fun and we're making a great macro bet on the growth of the sport."

LAFC's ascent is the latest sign of just how much MLS has grown since it was founded in 1996. There are now 29 teams in the league—it began with 10—with St. Louis City SC set to debut this season. Since 2019, the average team valuation has climbed 85%, from $313 million to $579 million. And the price tag for the next expansion team (likely Las Vegas or San Diego) is expected to be $500 million, according to a well-placed industry source, a considerable increase from the previous record of $325 million set by billionaire David Tepper when he founded Charlotte FC in 2019.

Billionaires have long believed in the potential of MLS. New England Patriots owner Robert Kraft and entertainment mogul Philip Anschutz were among MLS' original owners, and a slew of others—including Tepper, Morningstar founder Joe Mansueto (Chicago Fire, 2018) and Qualtrics' Ryan Smith (Real Salt Lake, 2022)—have since gotten in the game and driven up team values.

"It's less of a financial hurdle to control an MLS team than [in] some other sports, so you do see more people who can do it," says Rosenthal, who is worth an estimated $1.3 billion. "But I think people love it. They want to be a part of the community and the trajectory." *Forbes* estimates there are at least 19 billionaires or members of billionaire families who have key ownership stakes in MLS franchises.

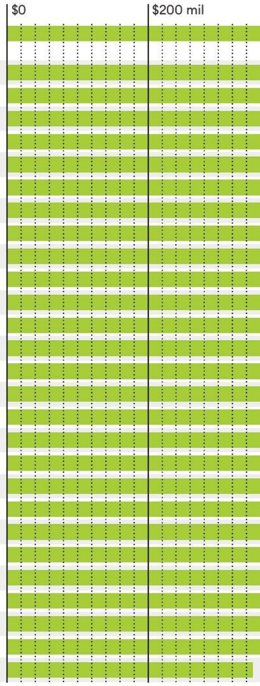
Rosenthal, who fell in love with soccer while managing his daughter's team, and Apollo Global Management partner Larry Berg, who played the sport from age 8, became LAFC minority owners in 2014. The two knew each other well from the private equity world and had together invested in Italian soccer club A.S. Roma. "To be honest," Berg says, "MLS wasn't really sexy yet." In 2016, they increased their stakes and became LAFC's co-managing owners along with Riot Games cofounder Brandon Beck, who had invested in 2015, each agreeing to rotate as the team's lead owner every four years. Rosenthal took on that role in January. As befits a team in Los Angeles, several celebrities—including Will Ferrell, Magic Johnson and Mia Hamm—have minority stakes in the club. Golden State Warriors co-owner Peter Guber is LAFC's executive chairman. Meanwhile, LAFC built a $350 million, 22,000-seat soccer-specific stadium and barnstormed soccer bars and held pep rallies to build interest. It even sent fans to a match in Germany to study European fan culture.

Those investments have paid tremendous dividends. LAFC has sold out every MLS regular season and playoff

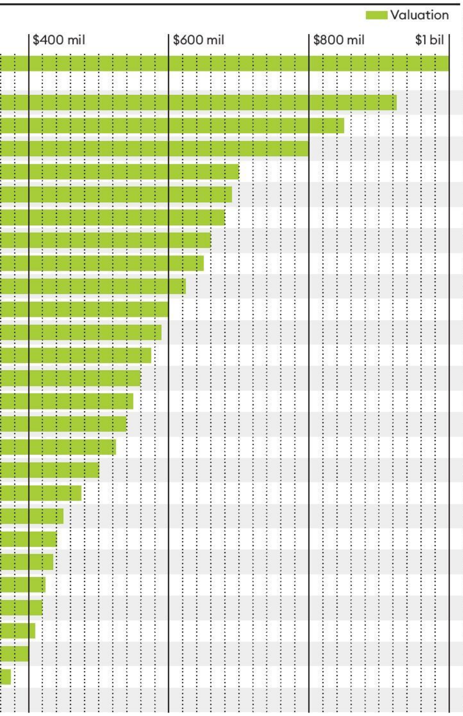
THE 2023 MLS TABLE

SINCE 2019, THE AVERAGE TEAM VALUATION HAS RISEN 85% EVEN AS

TEAM	2022 REVENUE
LAFC	$116 mil
LA Galaxy	$98 mil
Atlanta United FC	$81 mil
New York City FC	$55 mil
D.C. United	$70 mil
Toronto FC	$62 mil
Austin FC	$84 mil
Seattle Sounders FC	$66 mil
Portland Timbers	$65 mil
Charlotte FC	$69 mil
Inter Miami CF	$56 mil
Sporting Kansas City	$59 mil
Philadelphia Union	$54 mil
FC Cincinnati	$56 mil
Columbus Crew	$55 mil
Minnesota United FC	$54 mil
New York Red Bulls	$50 mil
Nashville SC	$46 mil
New England Revolution	$37 mil
San Jose Earthquakes	$43 mil
Real Salt Lake	$43 mil
Houston Dynamo FC	$39 mil
Chicago Fire FC	$25 mil
Orlando City SC	$42 mil
Vancouver Whitecaps FC	$21 mil
FC Dallas	$40 mil
CF Montréal	$30 mil
Colorado Rapids	$33 mil



ANNUAL REVENUE HAS REMAINED RELATIVELY LOW.



KEY OWNERS

- ***Bennett Rosenthal****, *Brandon Beck, Larry Berg*
- ***Philip Anschutz****
- ***Arthur Blank****
- *City Football Group*
- *Jason Levien, Steven Kaplan*
- *MLSE (**Larry Tanenbaum***)*
- *Anthony Precourt*
- *Adrian Hanauer, Jody Allen*
- *Merritt Paulson*
- ***David Tepper****
- ***Jorge**** *and Jose Mas, David Beckham*
- ***Cliff Illig****, *Patterson family*
- *Jay Sugarman*
- ***Carl Lindner III*, Meg Whitman****
- ***Dee & Jimmy Haslam****
- *Bill McGuire*
- *Red Bull GmbH*
- ***John Ingram****
- ***Kraft family****
- ***John Fisher****
- ***David Blitzer*, Ryan Smith****
- *Ted Segal*
- ***Joe Mansueto****
- *Wilf family*
- *Greg Kerfoot, Jeff Mallett, Steve Luczo*
- ***Clark and Dan Hunt****
- ***Saputo family****
- ***Stan Kroenke****

****Billionaires or billionaire families***

THE FIVE RICHEST MLS OWNERS

David Tepper *Charlotte FC*
$18.5 billion
The hedge fund billionaire also owns the NFL's Carolina Panthers, which he bought in 2018 for $2.3 billion. The teams share a stadium.

Stan Kroenke *Colorado Rapids*
$12.9 billion
A real estate mogul married to a Walmart heiress, Kroenke has stakes in a slew of sports teams, including the NFL's L.A. Rams, NBA's Denver Nuggets and English Premier League's Arsenal, that together are worth over $8 billion.

Philip Anschutz *LA Galaxy*
$10.9 billion
The owner of AEG Worldwide, an entertainment group that stages more than 22,000 events a year, Anschutz also owns the NHL's Los Angeles Kings and sold his 27% stake in the NBA's L.A. Lakers in 2021 for an estimated $1.5 billion.

Robert Kraft
New England Revolution
$10.6 billion
Kraft bought the NFL's New England Patriots for $172 million in 1994; the six-time Super Bowl champions are now worth $6.4 billion, more than 13 times the value of his MLS club.

Arthur Blank *Atlanta United FC*
$7.9 billion
The Home Depot cofounder's MLS team shares a home with his Atlanta Falcons of the NFL in the $1.5 billion Mercedes-Benz Stadium.

match since its first kickoff in 2018. Celebrity superfans are frequently seen in the stands, with Justin Bieber and Wiz Khalifa attending the MLS Cup in November. And LAFC turned an estimated $8 million operating profit on a league-high $116 million in revenue last year. That figure is set to rise in 2023, with BMO agreeing to a league-record 10-year, $100 million stadium naming rights deal.

Just how far can LAFC and MLS go? More than half the clubs lose money and, with average revenue at $55 million, MLS teams can't really compete against Europe's soccer clubs for top players. "A billion dollars is a huge number. Nine times, eight times revenue is huge, particularly when you're locked in to a certain degree on your media rights," says Edwin E. Draughan, a vice president at sports investment bank Park Lane. (Manchester United, by contrast, is valued at $4.6 billion, or 6.9 times revenue.) The future for MLS investors is predicated on how much soccer continues to grow in North America, with hopes pinned on a new annual tournament between MLS and Mexico's Liga MX kicking off in 2023. And in 2026, soccer should get another big boost when the United States, Canada and Mexico cohost the next World Cup.

Even more crucial is MLS' new media rights deal with Apple, which has unified the league's local and national broadcast rights under one umbrella. Per the arrangement, MLS is guaranteed at least $2.5 billion over 10 years, and possibly more based on subscriptions. It's a big payday, but less than the $300 million annually the league reportedly expected, especially given that MLS must pay the production costs. While MLS has added ancillary TV deals with Fox, Univision, TSN and RDS, no major North American sports league has committed to a streaming-first strategy.

"Everything's a gamble," Rosenthal says. "But it's a really smart bet."

GETTY IMAGES (2); JAMEL TOPPIN FOR FORBES; GETTY IMAGES (2)

METHODOLOGY: *All published figures are Forbes estimates; team values do not include stadiums, real estate or debt. Revenue and operating income are for the 2022 season, and the latter represents earnings before interest, taxes, depreciation and amortization. Playoffs, player transfers and shared distributions from MLS were excluded from revenue calculations. Clubs' ancillary revenue streams, such as non-MLS events, were included.*

New Billionaire

HOT STUFF

Forty-five years after arriving in the U.S. as a refugee from Vietnam, David Tran has built Sriracha into a billion-dollar business.

In December 1978, David Tran, then 33 years old, left his home in Vietnam with 100 ounces of gold. Worth $20,000 at the time, or about $90,000 in today's terms, the precious metal was stashed in cans of condensed milk to evade the attention of Vietnam's Communist authorities. Tran traveled by freighter to Hong Kong, where he spent eight months at a refugee camp, then moved to Boston for six months before settling in Los Angeles in January 1980.

Once in Southern California, he sold a chunk of the gold and bought a 2,500-square-foot building in L.A.'s Chinatown. He set up his business, Huy Fong—named after the freighter he took—to make a hot sauce he called Sriracha, after a recipe originally from Thailand. Huy Fong grossed just $2,300 in its first two months.

More than four decades later, Sriracha has been on *Survivor*, on the International Space Station and on dining tables worldwide. Its distinctive bottles, with their rooster logo and green squeeze cap, are in nearly one in ten U.S. kitchens, according to market research firm NPD Group. It ranks third in the $1.5 billion American hot sauce market behind Tabasco, which has been owned by the McIlhenny family since 1868, and Frank's RedHot, part of publicly traded McCormick.

Sriracha has become a behemoth without spending a dime on advertising and without raising its wholesale price since the early 1980s, although a climate-related shortage of chilis last spring forced Huy Fong to temporarily halt production, causing retail sales to spike as devotees and restaurants stocked up.

Today the company is worth $1 billion, based on estimated sales of $131 million in 2020, according to research firm IBISWorld. That makes Tran, 77, who owns the entire company, the nation's only hot sauce billionaire. He plans to pass the business on to his two children—William, 47, and Yassie, 41—both of whom currently work there. He remains unfazed by his success. "I want to continue to make a good quality product, like making the hot sauce spicier . . . and not think about making more profits," he tells *Forbes*. "I could use less expensive ingredients or promote my products to make more money. But no—my goal is always to try to make a rich man's hot sauce at a poor man's price."

Billionaires

AFRICA'S RICHEST

There are 19 African billionaires—one more than a year ago, thanks to the comeback of South Africa's Christoffel Wiese, 81. Worth $5.5 billion in 2017, Wiese (tied at No. 18 this year, with $1.1 billion) lost most of his fortune after shares of Steinhoff, which had bought his clothing retailer Pepkor in 2015, plunged in the wake of an accounting scandal that predated his involvement. He sued and last year received $500 million in cash and Pepkor shares. Even with his return, the combined fortune of the continent's billionaires is down 4% from 2022. Nigerian magnate Aliko Dangote tops the list for the 12th year running. The top five:

1. Aliko Dangote
$13.5 bil ↓
Nigeria
Cement, diversified

2. Johann Rupert & family
$10.7 bil ↓
South Africa
Cartier, Montblanc

3. Nicky Oppenheimer & family
$8.4 bil ↓
South Africa
De Beers diamonds

4. Abdulsamad Rabiu
$7.6 bil ↑
Nigeria
Diversified

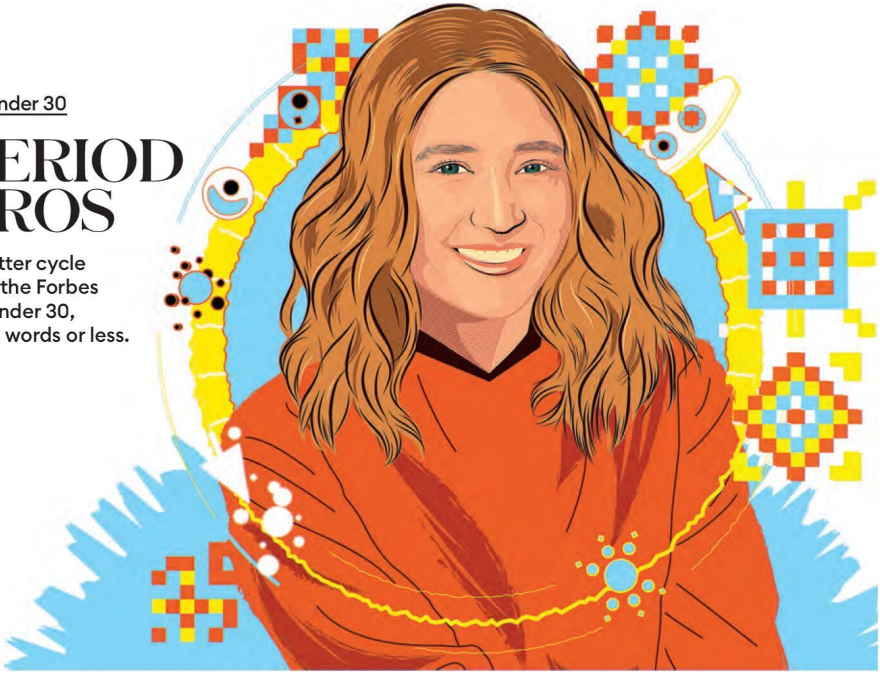
5. Nassef Sawiris
$7.3 bil ↓
Egypt
Investments

NEW BILLIONAIRE BY GIACOMO TOGNINI. ILLUSTRATION BY WESLEY BEDROSIAN FOR FORBES

30 Under 30

PERIOD PROS

A better cycle with the Forbes 30 Under 30, in 30 words or less.



Jamie Norwood 29
COFOUNDER, **STIX**

Her reproductive-health brand (with $7 million funding) sells pregnancy, ovulation, UTI tests online to 100,000-plus customers. Post–*Roe v. Wade,* Stix gives needy women its morning-after pill at no cost.

Bunny Ghatrora 28
COFOUNDER, **BLUME**

Puberty problems? Blume creates all-natural pads, tampons, deodorant, face wash and acne treatment for young women's changing bodies. The company has raised $5 million at a $14 million valuation.

Claire Coder 25
FOUNDER, **AUNT FLOW**

Millions of menstruators, breathe easy. Google, Netflix and 500 other companies pay Columbus, Ohio–based Aunt Flow to stock 17,000 bathrooms with free tampon and pad dispensers. Funding: $13 million.

Greta Meyer 25
Amanda Calabrese 25
COFOUNDERS, **SEQUEL**

These Stanford-educated engineers are using $5 million in funding to reinvent the tampon with a spiral design that absorbs more evenly. FDA approval is expected this year.

30 UNDER 30 BY KRISTIN STOLLER. ILLUSTRATION BY DIEGO PATIÑO

St. George Terroir Gin
$35

Dorothy Parker American Gin
$35

Farmer's Organic Gin
$30

Trend Lines

THE ALL-AMERICAN GIN-NAISSANCE

Bathtub gin flowed freely a century ago, but following Prohibition, American distillers focused on bourbon and other whiskies, ceding gin largely to the British. Some 70 years later—decades after vodka sales had surpassed those of gin in the U.S.—craft distillers in America began experimenting again with gin. Today, American gins are produced from New York to California and most states in between. Unlike with, say, a classic London Dry Gin, America's gin-novators dial down the juniper and emphasize native botanicals and citrus, or finish their gins in American rye or wine casks. Because unlike its cocktail cousin vodka, gin actually prides itself on having a flavor.

BUY, HOLD, SELL

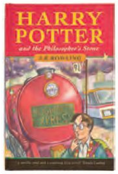
Rare Children's Books

Michael DiRuggiero

Owner of The Manhattan Rare Book Company, New York

Original Calvin and Hobbes Strips

Extremely rare, signed Calvin and Hobbes comics are no laughing matter–this original 1987 Sunday cartoon by Bill Watterson fetched $480,000 in November–and demand is growing. Get in on the action while you can.



First Editions of *Harry Potter and the Philosopher's Stone*

It may be a while before another *Philosopher's Stone*, the first Harry Potter book, matches 2021's record sale–$471,000–but the series' obsessive fans aren't going anywhere. Selling now would be *riddikulus*.

Rudyard Kipling

Despite Kipling's Disney-fueled fame, his antediluvian views on race and colonialism could lead to his removal from the canon in the future. A manuscript story from *The Jungle Book (above)* went for $76,000 in December–time to clear the bookshelf.

Renaissance Wheel-Lock Pistols

Thomas Del Mar

Director of Olympia Auctions, Sotheby's Consultant, London

Arms with Technical Innovations

Complex mechanisms like this $55,000 steel pistol (circa 1609), which can fire twice without the shooter having to reload, have seen prices plateau. But they're only getting rarer–take your shot now.

Highly Decorated, Unaltered Guns

Ornate pieces with outstanding provenance, such as this $97,000 mid-1500s pistol from the collection of Lord John Astor (1886–1971), inlaid with a hunting scene, are worth keeping. Their appeal will only grow.

Restored Guns

This $35,000 17th-century handgun was elaborately redecorated in the 1800s to boost its value. The market right now is relatively strong for such decorative firearms, but interest is ebbing.

20th- and 21st-Century Sculpture

Annie Dolan

Specialist, Co-Head of Day Sale at Phillips, New York

Kelly Akashi (b. 1983)

Interest in this Los Angeles sculptor is growing: Her mixed-media works were priced around $40,000 at last year's art fairs, and with her first museum retrospective currently on view in San Jose, future prices are shaping up nicely.

1960s Yayoi Kusama (b. 1929)

Kusama became a household name for her multimillion-dollar pumpkin creations, but owners of her early "accumulation" pieces (a $160,000 example from 1968 above) should count themselves lucky. Already fetching six figures, they will surely increase in value.

Melvin Edwards (b. 1937)

This African-American artist is finally getting recognition, with works recently snatched up by several museums, and collectors would be wise to cash in as well. In November, this 1992 steel sculpture sold for $132,000–almost three times its high estimate.

Listicle

ASK A BILLIONAIRE

Insights from our exclusive survey of 65 global billionaires

Cloudy Crystal Balls

The world's richest people lost a collective $2.2 trillion in wealth in 2022 as markets cratered—and they didn't see it coming. Polled at the start of last year, the ultrarich mostly expected to get ultraricher in 2022. Way off. Pandemic, inflation and war sent the S&P 500 down 19.4%, while a full 72% of billionaires thought the index would end the year up (or at worst flat).

Where will the S&P 500 end 2022?

BUY, HOLD, SELL BY ISABEL LORD. ILLUSTRATIONS BY CHRIS LYONS

WORLD OF FORBES

Across the planet, our 45 licensed editions span six continents, 27 languages and 14 time zones. They all share the same mission: celebrating entrepreneurial capitalism in all its forms.

ANGOLA

Coca-Cola recently installed a Luanda-based company to handle its Angola bottling needs and appointed Latin America chief Luisa Ortega to take over all Africa operations. The beverage company aims for women to hold 50% of leadership roles by 2030.

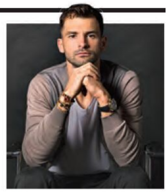
ARGENTINA

Fifteen years ago, Manuel Ron saw an early social-impact business opportunity in biofuels. His consortium of four companies, based in Córdoba, now does $100 million in annual revenue using corn and its byproducts to produce ethanol, biogas, fertilizer and animal feed.

AUSTRALIA

A luxury real estate developer, Tim Gurner wants to help his peers reach peak health and fitness. The 40-year-old is opening a chain of high-end wellness clubs called Saint Haven, starting in Melbourne in early 2023. A yearly membership will run about $20,000.

BULGARIA



Grigor Dimitrov ranks among the world's top 30 tennis players and takes the No. 2 spot on *Forbes Bulgaria*'s annual list of the country's top celebrities, behind Hollywood actress Maria Bakalova. The 31-year-old's on-court earnings total about $22 million.

CHILE

Rosanna Costa fronts *Forbes Chile*'s first print edition and its list of 30 Powerful Women. The 65-year-old economist became head of the Central Bank of Chile in February 2022–the first woman to hold the position in the institution's 97 years.

CHINA

Sequoia China partner Colin Guo fronts *Forbes China*'s 16th annual list of the country's top 100 venture capitalists, while the firm's billionaire founding partner Neil Shen ranks No. 1 for the fourth consecutive year. His investments include TikTok owner ByteDance and e-commerce heavyweight Pinduoduo.

CYPRUS

"Entrepreneurship should be encouraged and promoted to the point of becoming a part of Cypriot DNA," says new Doto chief executive Demetrios Zamboglou, tasked with relaunching the Limassol-based trading platform and promoting the island's ability to lead European fintech innovation.

COLOMBIA

Alongside fellow musicians Shakira and J Balvin, reggaeton singer Maluma makes *Forbes Colombia*'s list of the country's top 50 influential creatives. The Medellín star's business portfolio includes real estate, a mezcal brand and more, generating $80 million in sales last year.

ECUADOR

As head of health care at FEMSA, Daniel Belaunde oversees roughly 1,000 pharmacies across four countries. The Mexican multinational retailer has invested more than $300 million expanding its presence across Ecuador since entering the market in 2018.

FRANCE

"Learn how to capitalize on social networks. Today, your best calling card is the content you share on platforms," advises Maye Musk, the 74-year-old mother of Twitter CEO and frequent poster Elon Musk, to older women concerned about their career horizon.

GEORGIA

"The Soviet regime killed the desire to succeed. It made everyone equal."

–Businessman Khvicha Makatsaria, who hails from Georgia's northwestern Abkhazia region and owns telecom and energy assets, explaining why his countrymen dislike the wealthy and crediting the U.S. for celebrating accomplished people who create jobs and pay taxes.

GREECE

Odisseas Athanasiou heads Maroussi-based Lamda Development, which is leading the $9 billion Ellinikon project to convert the former Athens airport into a waterfront residential and commercial district larger than London's Hyde Park; it will include Greece's first "green" skyscraper.

GERMANY

Leading cardiac surgeon Dilek Gürsoy is planning to open her own clinic in the western city of Mönchengladbach this year. The first-generation Turk's competitive strategy: Target self-paying foreigners, while insurance covers Germans' cost for an artificial heart (about $160,000).

BY KATHERINE LOVE. ANGOLA: THE COCA-COLA COMPANY; ARGENTINA: ALEJANDRO BACCARAT FOR FORBES ARGENTINA; BULGARIA: CEDOU; CYPRUS: DEMETRIS VATTIS; ECUADOR: PAVEL CALAHORRANO; FRANCE: SERGEY BUZOVSKY; GERMANY: PETER RIGAUD; GREECE: LAMDA DEVELOPMENT

GUATEMALA

More than 20% of Central America's GDP comes from international remittances such as migrants' wages sent home to family members. The majority of this cash arrives from the U.S., and Guatemala receives the most in the region—some $15 billion in 2022.

HUNGARY

Through the pandemic and the war in Ukraine, Bonafarm CEO Attila Csányi has led growth at the country's largest agricultural firm (now valued at approximately $500 million), steadily lifting the Csányi family's billion-dollar fortune—built by his father, Sándor, who heads Hungary's largest bank.

INDIA

The Securities and Exchange Board of India introduced plans in December to tighten stock buybacks as investors questioned why mobile payments platform Paytm is repurchasing $103 million worth of its poorly performing stock a year after going public in India's then-largest-ever IPO.

ISRAEL

Forbes Israel presents Google cofounder Sergey Brin, the world's 13th-richest person, as the face of its 2022 World's Jewish Billionaires list. Among the 267 members, newcomers include Tiger Global Management partner Scott Shleifer and Israeli venture capitalist Oren Zeev.

ITALY

While Spain begins requiring cigarette manufacturers to contribute to litter cleanup, tobacco company BAT Italia and CEO Roberta Palazzetti are using satellite data to measure their campaign of raising awareness and to reduce the 14 billion cigarette butts polluting Italy's environment.

JORDAN

The cofounders of Abwaab—*(from left)* CEO Hamdi Tabbaa, CTO Hussein AlSarabi and COO Sabri Hakim—launched the Amman-based edtech firm in 2019, months before the pandemic lockdown heightened the need for online learning and tutoring. Abwaab has raised $27.8 million.

JAPAN

Manufacturer Euglena employs Midori Watanabe, 16, in a remunerated role as "chief future officer," bringing youth into management to propose sustainability initiatives for the company. Watanabe's predecessor persuaded the Tokyo company—which makes cosmetics, drinks and supplements using algae—to eliminate its use of plastic bottles.

KAZAKHSTAN

Elisar Nurmagambet, a 29-year-old Almaty native now living in Houston, created Black Ice AI. The software, used by banks and the U.S. government, aggregates billions of data points in any language to detect cyber threats and crimes.

MEXICO

In November, Mondelēz International CEO Dirk Van de Put finalized the $1.3 billion acquisition of Mexican candy and chocolate maker Ricolino from its parent, baking giant Grupo Bimbo. The acquisition doubled the size of Mondelēz's operations in Mexico.

PERU

After working 20 years at L'Oréal and P&G, Peru native Michel Brousset created his own company for incubating and accelerating beauty brands in 2019. New York–based Waldencast debuted on the Nasdaq last July in a merger valued at $1.2 billion.

ROMANIA

Having previously outfitted properties in Dubai, Cairo and London, Lebanese luxury designer Elie Saab's eponymous fashion and interiors brand is heading to north Bucharest. Elie Saab Towers, a $108 million residential project, is scheduled to open in 2024.

SLOVAKIA

As the Slovak Republic turns 30 in 2023, so does the Slovak vineyard belonging to couple Jaroslav *(below)* and Jarka Ostrožovic. A 1993 vintage of their internationally acclaimed wine, produced in the country's southeastern Tokaj region, sells for $188.

SOUTH KOREA

Second-generation CEO Ik-hwan Kim leads Hansae, an apparel manufacturing giant founded in 1982 and headquartered in Seoul. He has introduced smart factories, sustainability measures and flexible culture while producing 400 million garments a year for the likes of Gap and H&M.

SPAIN

Forbes Spain asks 23 industry leaders what great technological changes are coming in 2023. Workplaces will turn to the metaverse for everyday collaboration, creative meetings and brainstorming, says Madrid-based architect and entrepreneur Silvia Rivela.

THAILAND

Budget carrier Thai AirAsia and CEO Tassapon Bijleveld are approaching cruising altitude after the pandemic grounded planes for 18 months. About 60% of flights have resumed, with the critical Chinese market expected to rebound in 2023 as Covid-19 protocols ease.

UGANDA

> "Africa offers the last great opportunity for exciting innovation in the world today."

—Uganda native Ham Serunjogi, cofounder and CEO of San Francisco–based unicorn Chipper Cash, which brings financial services to the continent—where startup investing is heating up.

UKRAINE

As leading parcel deliverer Nova Poshta rebounds from a wartime slowdown, cofounders *(from far left)* Volodymyr Popereshnyuk and Viacheslav Klymov are expanding internationally this year, opening branches in surrounding nations, including several in Poland, to which many Ukrainians have relocated.

JAPAN: JAN BUUS; JORDAN: ABWAAB; KAZAKHSTAN: ANDREY LUNIN; MEXICO: FERNANDO LUNA ARCE; PERU: WALDENCAST; ROMANIA: METROPOLITAN GROUP; SLOVAKIA: MIRO NÔTA; SOUTH KOREA: JONGKEUN PARK

Conversation

MEGAN'S MOMENT

She's a rambunctious colt in both name and sheer determination: Our lead December/January cover star (there were four in all), Megan Thee Stallion, the Grammy-winning rapper and budding entrepreneur, proudly told us she'll "take a break when I'm dead." Readers admired her pluck. "Megan is on a whole new level of professionalism," said @stockregion on Instagram. They also praised her ability to withstand a cascade of recent troubles: the 2019 death of her mother, battalions of detractors, the October 2022 robbery of her home (she wasn't there) and even taking a bullet in the foot. "I love how she thrives despite all the hate and hardships," said Reise Piece, commenting on our companion video YouTube interview of the star. Back on Instagram, @daisyknox21 threw shade at one of our other cover subjects: "Finally someone who actually worked for her success and didn't have it handed to her like Hailey Bieber." *Forbes* estimates MTS earned $13 million last year—a solid performance as she gallops around the turn and races to build an empire worthy of her role model, Beyoncé. Summed up @etymologyjewelry on Instagram: "Queen alert right here."

BEAST IN SHOW

Jimmy Donaldson—the 24-year-old super-creator better known as "MrBeast"—pulled in $54 million last year from his goofy, madcap shenanigans on YouTube and his burgeoning culinary endeavors (Feastibles snack bars, MrBeast Burger). Readers marveled at both his earning power—and his famous generosity.

@FLORIS_TH: "He's going to be the first YouTube billionaire."

@DIZZYDIDDY: "My guy! [His] parents were like, 'YouTuber? Get a real job!' Haha—they didn't see the vision."

@DAMN_ZUNO: "This guy will be a true philanthropist when he's older. I can't think of anyone else who consistently gives his wealth to others."

@MWS: "Huge brands used to sleep on YouTubers and their influence years ago. Never gave 'em the time of day. Now everyone sees creators have more influence than some celebrities and athletes."

@ITSLIZARD1: "YouTube is changing the world—starting to see more proof every day."

THE INTEREST GRAPH

1,671,563 Meet the Forbes 30 Under 30 Class of 2023

94,788 The Highest-Paid Dead Celebrities of 2022

79,653 The Guru of Greensboro: How a College Dropout Built a $2.9 Billion Real Estate Empire

75,718 Could MrBeast Be the First YouTuber Billionaire?

61,568 Megan Thee Millions: Rapper Reaps Record Riches

39,862 How to Get a First Job if You Aren't LinkedIn

10,546 Meet the Billionaire Who Wants to Build the Tesla of Airplanes

2,780 **THE BOMB:** His Clean-Energy Fund Was Up 206% in 2020. Then It Crashed. What Should We Expect Now?

BY EMMY LUCAS

JOIN THE MOVEMENT TO ACCELERATE CANCER RESEARCH

Right now, most clinical information is not regularly shared with the researchers who are trying to uncover new information about cancer every day, **but you can help change that.** Patients can help accelerate research **by sharing their data and unique experiences.**

When patients stand together with researchers, they can unlock new discoveries and treatments. People with all types of cancer may be eligible to **join Stand Up To Cancer, Count Me In and more than 7,500 patients who have already participated in this mission** to accelerate the pace of cancer research.

Find out more and sign up to join the movement at StandUpToCancer.org/CountMeIn

Uzo Aduba
Stand Up To Cancer Ambassador

Photo By
Matt Sayles

STAND UP TO CANCER

Count Me In

Stand Up To Cancer is a division of the Entertainment Industry Foundation (EIF), a 501(c)(3) charitable organization.

By **Christopher Helman**

Photograph by **Benedict Redgrove** for Forbes

The Nuclear Option

Old-fashioned fission may be the best way to wean the world off fossil fuels. So **BRET KUGELMASS** wants to deploy 10,000 inexpensive, off-the-shelf microreactors— but not in America.

An hour west of Houston, where suburban sprawl surrenders to cow pasture, sits a cavernous industrial workshop in which welders and pipefitters assemble equipment bound for oil refineries and drilling platforms in the Gulf of Mexico. "These guys have been working for decades to modularize components for high pressures and temperatures," says Bret Kugelmass, 36, the founder and CEO of Washington, D.C.–based Last Energy. That's why he came here, to VGas LLC, when he wanted a prototype of the small, modular nuclear fission reactors he's betting could play a big role in cutting down on fossil fuels.

Based on Kugelmass' open-sourced design and using mostly off-the-shelf components, VGas fabricated almost all the parts for a basic small light-water reactor and crammed them into nine shipping container–sized modules. It took only two days to bolt them together.

To be clear, this wasn't a *working* prototype—in fact, its 75-ton reactor pressure vessel is cut away to show how standardized fuel assemblies of zirconium rods filled with pellets of enriched uranium fuel could nestle inside. "We're not doing any new chemistry or reactor physics," Kugelmass emphasizes. "Our core innovation is the delivery model of a nuclear power plant. We're just packaging it in a different way."

We're talking old-fashioned fission technology here—the kind that for decades has been used to generate energy by splitting uranium atoms apart. It's the opposite of nuclear fusion, which is how the sun generates energy: by fusing hydrogen atoms. For decades fusion research has stalled because scientists could not coax more energy out of fusion reactions than it took to trigger them. Recent breakthroughs show promise, but even in the most optimistic scenarios commercial fusion is many years away.

Leaning into science is one way to make things easier; avoiding U.S. regulators is another. Kugelmass isn't even asking for American approval of his plants. Instead, he hopes to have his first 20-megawatt reactor (enough to power 20,000 homes) up and running by 2025 in Poland, which has been getting 70% of its power from burning coal since Russian natural gas supplies were cut off. Poland has agreed to buy the electricity from 10 of the units, which Kugelmass hopes to make for $100 million each, under a long-term contract that requires Last Energy to operate the reactors and take on the risk of cost overruns.

Kugelmass aims to build 10,000 of these mini-reactors worldwide, which sounds fantastical for a nuclear industry newbie who has so far raised just $24 million in venture capital. It's smart money, though: $21 million came in a round led by Austin, Texas–based Gigafund, whose managing partner, Luke Nosek, was the first VC investor to back Elon Musk's SpaceX.

You can still hear in Kugelmass' voice the Long Island kid who loved building robots and who studied math at SUNY Stony Brook before earning a master's in mechanical engineering at Stanford. In 2012, when he was just 25, he launched a business that used a fleet of fixed-wing drones to assess storm risk by conducting photographic surveys of millions of rooftops for insurance companies. He raised $5.8 million for his venture, known as Airphrame, and sold it in 2017. At that point, he decided to devote himself to fighting climate change.

Kugelmass quickly homed in on nuclear power as a big part of the solution. According to Columbia University's International Research Institute for Climate and Society, nuclear is the only fix for the "energy trilemma"—a source that is reliable, affordable and sustainable. Wind? Solar? They require more than 10 times as much material per unit of electricity generation as nuclear, notes Marc

PATRICK WELSH FOR FORBES; COURTESY LAST ENERGY

HOW TO PLAY IT

By Jon Markman

Basic microreactors are the future of nuclear power generation. The best way to play this trend is **Cameco**, the Saskatchewan-based uranium producer that holds some of the world's largest deposits. Nuclear power is impossible without uranium U-235, the fissionable material used in all current nuclear facilities. Momentum is building in the West to expand the life of existing nuclear plants, and numerous companies and countries are pursuing the development of small modular reactors and advanced reactors, according to the International Atomic Energy Agency. This interest will ultimately increase demand for uranium. Cameco could trade to $34.50 within 12 months, a gain of 28% from the current price of $27.

Jon Markman is president of Markman Capital Insight and editor of Fast Forward Investing.

Green Dreams

Last Energy envisions its power plants blending into the environment, with reactor cores installed safely underground and symmetrical fans and steam turbines replacing hulking cooling towers. Each 20-megawatt unit requires less than an acre of land.

Bianchi, an energy analyst at Cowen & Co. Moreover, land access and NIMBY-ism make it hard to scale up—wind and solar farms worldwide already cover an area twice the size of Texas and deliver just 5% of the planet's electricity needs. Generating the same 20 megawatts as one of Kugelmass' proposed mini-reactors would take, on average, 600 acres of solar panels or 4,000 acres of wind turbines.

Kugelmass was still a nuclear novice in 2018, so he began interviewing experts via a podcast, *Titans of Nuclear,* that has now grown to nearly 400 episodes. He studied the obstacles to building more nuclear capacity and concluded that too much complexity, along with excessive regulation, were major problems.

Another issue: the historically runaway costs of large nuclear projects, which he attributes in part to skewed incentives in the way they have been financed and built. In the U.S., utilities that dare try to build new nuclear plants bear little risk from outrageous cost overruns, since they know they can always cover bills by charging more for their electricity. After all, their monopolistic rates are set by regulators. Kugelmass' solution is to adopt the financing model from wind and solar projects: Last Energy will build and own the plants, using long-term contracts like the one signed in Poland as the basis for borrowing the large amounts of money needed—around $1 billion in the case of the Polish project.

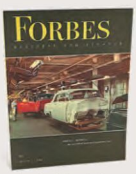
Last Energy is hardly the only startup aiming to build a new generation of smaller reactors. Deep-pocketed competitors include TerraPower, a joint venture between Bill Gates and Warren Buffett's Berkshire Hathaway, which is seeking to build a novel molten chloride, liquid sodium–cooled 345-megawatt reactor in Wyoming. Despite $2 billion in federal subsidies, TerraPower's costs have ballooned to more than $4 billion amid years of delays. X-energy, soon to be a public company via SPAC sponsored by Ares Management *(see page 32),* is also using a newfangled meltdown-proof uranium oxycarbide fuel for its 320-megawatt reactor, which will result in greater regulatory scrutiny. NuScale Energy, the first publicly traded mini-nuke developer, got its 50-megawatt design approved in January after spending a decade and $1 billion to navigate the U.S. Nuclear Regulatory Commission but doesn't expect to finish a first plant until the early 2030s.

So how does Last Energy, using old technology, answer the safety fears (justified and not) that have held up nuclear projects for decades? Kugelmass says that even if its multiple redundant cooling mechanisms failed, the underground vault encasing the reactor in 550 tons of steel would efficiently dissipate excess heat and contain fuel in the unlikely event of a meltdown.

As for radioactive waste, most nuclear plants remove the bundles of spent fuel rods from the reactor and store them outside in concrete and steel casks. Last Energy's plan, by contrast, calls for bringing in a new reactor module, preloaded with fuel, once every six years. The old cores stay behind, secured underground, cooling off until the eventual decommissioning of the plant. It might seem a waste to replace an entire reactor module rather than just the fuel, but it does make life simpler. "We've deliberately accepted certain plant inefficiencies to achieve economic efficiencies," Kugelmass says. "Any other approach and you'd be right back where we started." F

The Vault

METAL DETECTORS



At the dawn of the Cold War, the U.S. government was desperate for American uranium—and willing to pay. In 1948, Uncle Sam made an offer: a minimum of $1.50 per pound of uranium discovered (about $19 today), setting off a midcentury radiation rush as average Joes rushed West hoping to strike it big.

Besides some 200 government and industry geologists hunting uranium on Colorado's Plateau, hundreds of amateurs packing pick, shovel and Geiger counter are trampling American soil. For them and the thousands of arm-chair '49ers with vacation get-rich ideas, [the United States Atomic Energy Commission] makes no secret of exploratory methods in a neat, pocket-sized, 128-paged manual: "Prospecting for Uranium." Packed with plain poop on where and how to find it, the copper-colored books adequately describe all the U-ores from chemistry to value, explain the use of "radiation detection instruments," brim with tables and appendices.

—*Forbes,* August 1, 1953

FINAL THOUGHT

"THERE IS NO EVIL IN THE ATOM, ONLY IN MEN'S SOULS."

—Adlai Stevenson

By Hank Tucker

Photograph by Guerin Blask for Forbes

Unrisky Business

Megadeals and private equity titans may dominate the headlines, but **ARES MANAGEMENT** has quietly amassed $341 billion in assets by offering steady returns regardless of what happens in the stock market.

A

As an enterprising 13-year-old New York Yankees fan in 1986, Michael Arougheti ran a baseball card trading business, setting up tables at collectibles shows on weekends in suburban New York City. He made thousands but learned that flipping hundreds of cards for tiny gains was a better strategy than obsessively pursuing a rare Hank Aaron rookie card—which might be worth tens of thousands but was almost impossible to find. Since 2018, Arougheti has been the CEO of credit-focused alternative asset firm Ares Management. It has quietly become one of the most successful firms on Wall Street, but unlike its more famous private equity peers, Ares is beating the odds with a steady diet of thousands of singles.

The Los Angeles–based firm has grown to $341 billion in assets, more than tripling in size in the last five years, with $204 billion in its credit business, which makes loans to little-known mid-

Yield Compounders

Cofounders Michael Arougheti *(left)* and Antony Ressler's fixation on fixed income has made their Ares Management a global financial all-star.

Photo: ModernTake

Showcasing the world's finest homes... and the stories behind them

ForbesGlobalProperties.com

Offered for sale by EQTY
Tara Shapiro
+1 949 478 7781 | tara@eqtyrealestate.com
DRE: 01892201

sized companies worldwide. While firms like KKR are known for bold equity bets with unlimited potential gains, Ares' upside is mostly limited to the coupon interest payments—pegged to benchmark rates like LIBOR—on its loans. That's just fine for its 2,000 pension funds, insurance companies and other institutional clients.

"People are gravitating toward durable yield. We were very early proselytizers of the value of compounding yield," says Arougheti, 50, noting a boom in business precipitated by falling equity markets and higher interest rates.

Ares is a standout on the inaugural *Forbes* Financial All-Stars list, highlighting 50 global financial companies in seven sectors: banking, insurance, capital markets, consumer finance, mortgages, fintech and business development. According to analysts at KBW, these companies have high risk-adjusted five-year returns, as well as a host of impressive fundamentals including debt to equity and revenue growth. Ares' 316% cumulative total return for the five years ending in September 2022, versus 56% for the S&P 500, tops the list *(see sidebar at right)*.

Like other successful alternative asset managers, Ares has become a billionaire factory. Arougheti and cofounders Bennett Rosenthal, 59, and David Kaplan, 55, are all billionaires, by *Forbes'* reckoning. Executive chairman Antony Ressler, majority owner of the NBA's Atlanta Hawks, is now worth an estimated $6.3 billion.

Ressler cofounded Ares in 1997 when he was 37 as the credit arm of Apollo Global Management, which he previously started in 1990 with colleagues from Drexel Burnham Lambert, led by Leon Black. Prior to its collapse in 1990, Drexel, under Michael Milken, pioneered the market for original-issue junk bonds. Ressler's five years at Drexel served as a crash course in credit.

"That asset class forced you to be an analyst, forced you to understand companies, because historically, much of investment banking was to finance companies in the high-grade world, which didn't require enormous analysis," says Ressler, 62. "That has been the foundation of my career and of Ares. Understanding and pricing risk is fundamentally what we do for a living."

Today's incarnation of the firm began to take shape when Arougheti and Kipp deVeer, now the head of Ares Credit Group, arrived in 2004 to build its private credit business. Twenty years ago, private credit was a foreign concept. Institutional debt investors generally bought bank loans packaged together and sold by investment banks in liquid credit funds. Ares cut out the middleman, going directly

FORBES

FINANCIAL ALL-STARS

From small community banks to trillion-dollar private equity firms like Blackstone, these 50 financial stocks have rewarded investors with impressive gains in the last five years and have strong fundamentals to continue outperforming. Split into seven subsectors, the list represents the top 9% of the 556 stocks the financial services specialists at KBW cover across the U.S., Europe and Japan.

American Financial Group
TICKER: **AFG**
5-YEAR RETURN: **89%**
MARKET CAP: **$11.8 BIL**
Sells specialty property and casualty insurance

Ares Management
ARES • 316% • $22.8 BIL
Credit-focused alternative investment manager

American Express
AXP • 60% • $117.1 BIL
Credit card giant

BancFirst
BANF • 76% • $2.7 BIL
A 100-branch Oklahoma bank entering Texas

Popular
BPOP • 130% • $4.8 BIL
Puerto Rico's biggest bank

Blackstone
BX • 218% • $106.6 BIL
World's largest alternative asset manager

Pathward Financial
CASH • 30% • $1.3 BIL
South Dakota bank, formerly Meta Financial

CBRE Group
CBRE • 78% • $26.2 BIL
Coldwell Banker, the world's largest real estate brokerage

Commerce Bancshares
CBSH • 58% • $8.2 BIL
Kansas City bank with $37 billion in assets

Capital City Bank Group
CCBG • 43% • $536 MIL
A 128-year old community bank in Tallahassee, Florida

Cullen/Frost Bankers
CFR • 60% • $8.7 BIL
Texas' Frost Bank, with $53 billion in assets

City Holding
CHCO • 43% • $1.4 BIL
West Virginia community bank

Mr. Cooper Group
COOP • 255% • $3.2 BIL
Fortress Investment's mortgage lending spinoff

Deutsche Börse
DB1.GR • 102% • $33.7 BIL
Owner of the Frankfurt Stock Exchange

D.R. Horton
DHI • 79% • $32.9 BIL
Largest U.S. homebuilder

Esquire Financial Holdings
ESQ • 135% • $365 MIL
Long Island bank specializing in law firms

First BanCorp
FBP • 194% • $2.4 BIL
Puerto Rican consumer bank

First Citizens BancShares
FCNCA • 117% • $11.5 BIL
Family-owned bank with $58 billion in assets

Fidus Investment
FDUS • 83% • $491 MIL
Illinois-based middle market lender

First Financial Bankshares
FFIN • 99% • $4.9 BIL
West Texas bank with $13 billion in assets

Gjensidige Forsikring
GJF.NO • 76% • $9.1 BIL
A 200-year-old Norwegian insurer

Guaranty Bancshares
GNTY • 34% • $394 MIL
Small Texas bank with 32 locations

Sources: KBW, a Stifel company, based on 9/30/2022 data; Forbes; Factset Research.

Houlihan Lokey
HLI • 115% • $6.6 BIL
L.A.-based mergers-and-acquisitions investment bank

Hamilton Lane
HLNE • 144% • $4.0 BIL
Private market alternative investment manager

Lennar
LEN • 47% • $28.2 BIL
Large Miami-based homebuilder

Lakeland Financial
LKFN • 68% • $1.7 BIL
Indiana bank started after the Civil War

Mastercard
MA • 107% • $367.7 BIL
The second-largest credit card merchant

Metrocity Bankshares
MCBS • 148% • $504 MIL
Georgia bank serving Asian-American communities

Meritage Homes
MTH • 58% • $3.8 BIL
Arizona-based homebuilder

Munich Reinsurance
MUV2.GR • 69% • $51.0 BIL
Large German reinsurer

Nasdaq
NDAQ • 138% • $28.6 BIL
Runs 10 stock exchanges in the U.S. and Europe

Oaktree Specialty Lending
OCSL • 66% • $1.5 BIL
Delaware-based credit investing firm

OFG Bancorp
OFG • 202% • $1.3 BIL
Regional bank operating in Puerto Rico and the U.S. Virgin Islands

OP Bancorp
OPBK • 34% • $170 MIL
California bank that focuses on the Korean-American community

OSB Group
OSB.LN • 25% • $2.7 BIL
London-based specialty mortgage lender

PCB Bancorp
PCB • 44% • $271 MIL
Small Southern California bank

PennyMac Financial Services
PFSI • 156% • $3.2 BIL
Home mortgage lender

Progressive
PGR • 183% • $79.3 BIL
Large auto insurer in the United States

Regions Financial
RF • 56% • $21.4 BIL
Mashup of three Alabama banks; $158 billion in assets

RLI
RLI • 104% • $6.0 BIL
Illinois insurance company; started in contact lenses

SVB Financial Group
SIVB • 79% • $17.4 BIL
A Silicon Valley bank with $212 billion in assets

Swiss Life Holding
SLHN.SW • 60% • $18.4 BIL
One of Switzerland's largest life insurance companies

Southern Missouri Bancorp
SMBC • 52% • $432 MIL
Community bank in Missouri, Arkansas and Illinois

Swissquote Bank
SQN.SW • 212% • $2.7 BIL
Large online bank in Switzerland

Stock Yards Bancorp
SYBT • 103% • $1.8 BIL
Kentucky bank with roots in the livestock industry

The Bancorp
TBBK • 166% • $1.6 BIL
Major issuer of prepaid debit cards

Triumph Financial
TFIN • 69% • $1.3 BIL
Payments processing, credit cards for the trucking industry

Tryg
TRYG.DC • 71% • $15.1 BIL
The largest insurance provider in Scandinavia

Visa
V • 74% • $463.6 BIL
The world's largest credit card company

W.R. Berkley
WRB • 142% • $19.0 BIL
Billionaire-owned insurance company

Listicle

DREXEL BILLIONAIRE LAMBERT

Long before Antony Ressler made billions at Ares Management, he made his bones at Drexel Burnham Lambert, Michael Milken's famed investment bank that fueled the go-go 1980s with junk bonds. He isn't the only one from Drexel to ascend to *Forbes'* billionaires list—here are the five richest.

LEON BLACK
Net worth: $9.3 bil
Cofounder, Apollo Global Management

JOSH HARRIS
$6.2 bil
Cofounder, Apollo

MICHAEL MILKEN
$6 bil
Drexel's legendary junk bond king

MARC ROWAN
$4.9 bil
Cofounder, Apollo

STEPHEN FEINBERG
$3.8 bil
Cofounder, Cerberus Capital

to businesses to self-originate loans.

Like equity analysts, Ares does its own risk assessments, meeting with management and looking for growth, juicy margins and high return on invested capital. In 2021, it helped finance Thoma Bravo's $6.6 billion acquisition of online postage retailer Stamps.com. Microstar Logistics, one of the world's largest beer keg leasing companies, has tapped Ares for hundreds of millions in loans over a dozen years.

Nearly all of Ares' investor offerings contain floating-rate bonds that are senior secured, meaning they're backed by borrowers' assets. That stability has helped the firm thrive in volatile markets. It raised $77 billion in gross new capital in 2021 and another $45 billion in the first three quarters of 2022, and its management fee revenue—it charges between 0.35% and 1.5% for its credit funds—has more than doubled in the last three years to $2 billion.

While debt is its bread and butter, Ares has $137 billion in other segments like real estate, infrastructure and private equity. That includes a $5.4 billion "special opportunities" fund that invests in restructurings. Bets on formerly bankrupt Frontier Communications and Hertz have helped the fund return 26% annually since 2019. Ares raised a second $7.1 billion special opportunities fund last year. The firm also has $3.7 billion to invest in sports, media and entertainment, taking debt or minority equity stakes in 19 such companies, including the NHL's Ottawa Senators and Formula 1 team McLaren Racing. Rosenthal, outside the firm, also owns a significant stake in one of Los Angeles' Major League Soccer teams *(see page 15)*.

"These are noncorrelated assets. They have scarcity value," Arougheti says. "The value of content is increasing, and there's really no more unique unscripted content than live sports." F

FINAL THOUGHT

"RIVERS KNOW THIS: THERE IS NO HURRY. WE SHALL GET THERE SOMEDAY."
—A.A. Milne

GETTY IMAGES (3); BLOOMBERG; AP

By **Steven Bertoni**

Photograph by **Franco Vogt** for Forbes

The Dry Life

ATHLETIC BREWING's Bill Shufelt and John Walker are making nonalcoholic beer tasty enough to please the biggest suds snobs. And with a nearly $500 million valuation, the six-year-old startup has investors intoxicated.

On the Wagon

Athletic cofounders Bill Shufelt *(left)* and John Walker at their new Milford, Connecticut, brewery, which can fill 450 cans of beer a minute.

O

On a dreary Wednesday in January, Bill Shufelt, the cofounder and CEO of Athletic Brewing, grabs a yellow can of golden ale off the humming conveyor belt in his new 150,000-square-foot Milford, Connecticut, brewery and cracks it open. It's 10 a.m.—but there's no need for an intervention.

Over the last few years, Shufelt, 39, and his cofounder John Walker, 42, have created the buzziest beer brand in America by creating craft brews without the buzz. Alcohol-free beer, often bland and thin, has long been seen as the brewer's equivalent to decaf coffee or tofu turkey. Athletic Brewing is out to eliminate the stigma, making hoppy IPAs, crisp ales and toasty porters with the flavor and feel of a craft beer—but with less alcohol than a slice of rye bread. A six-pack costs about $10. "Humans have been drinking beer for more than 5,000 years," says Shufelt, a former hedge fund trader who, a decade ago, gave up booze to improve his market focus. "I'm a beer lover and food lover—it blew my mind that there wasn't a beer for people living modern,

healthy lifestyles."

Investors are betting big that millions of drinkers feel the same. Since Shufelt and Walker started tinkering with home-brew equipment in 2017, they have raised a dizzying $173.5 million from Alliance Consumer Growth, TRB Advisors and Tastemaker Capital. In the fall of 2022, Keurig Dr Pepper, the $12.7 billion (sales) beverage giant, took a $50 million minority stake at a valuation just under $500 million, according to sources close to the deal. Celebrity investors including Naomi Osaka, J.J. Watt, Karlie Kloss and Toms Shoes founder Blake Mycoskie have also bellied up to the bar. "I'd never been a fan of nonalcoholic beer—not because it didn't have alcohol, because it didn't taste good," says chef and Momofuku founder David Chang, who has invested in Athletic and carries its beers in his restaurants. "Athletic is breaking the stereotype—one of food's taboos—and it's gaining momentum."

While traditional U.S. beer sales have been relatively flat for years, the market for boozeless brews is booming, with total revenue up 20% to $330 million between the summer of 2021 and 2022, according to NielsenIQ. Athletic has outpaced the pack. It says 2022 sales grew almost 70%, topping $60 million, compared to $37 million in 2021. (Heineken 0.0 is the market leader with more than 25% of U.S. sales.) "Growth is being driven by people who enjoy alcohol and are interested in health, wellness and great taste," says Keurig Dr Pepper's head of strategy, Justin Whitmore.

Still, that's a heady valuation of about eight times revenue in an industry where low single digits are the norm. Although the sober sector is small beer, accounting for just 0.33% of the $100 billion U.S. suds market, industry bigwigs think that share could grow fast. Anheuser-Busch InBev, the $57.3 billion (sales) brewing behemoth, has stated it aims for nonalcoholic and low-alcohol beer to be at least 20% of its global beer sales by 2025. "Apply that to the craft beer market—that's tens of billions of dollars in the United States," says Andrew Dickow, the head of the food-and-beverage investment banking team at Greenwich Capital Group. "I can't see how it doesn't get there, and it can be even bigger."

The pandemic and the rise of social media have only increased America's obsession with health and fitness. McKinsey estimates that wellness products and services have become a $450 billion industry as customers clamor for clean products, nutritious food, improved sleep and better physical and mental health. Growing up with legal marijuana, Gen Z is drinking less than older generations. In 2022, more than a third of U.S. drinkers attempted the Dry January trend, according to beverage research firm CGA. Companies are rushing to offer alternatives like mocktails, alcohol-free wine and CBD seltzers. Still, nonalcoholic beer accounts for 85% of the growing market of "untoxicating" beverages. "I don't have to compromise on taste, get to enjoy the social scene and hit that craving," says Karlie Kloss, the supermodel and entrepreneur, who first tried Athletic beer while pregnant and later invested in the company. "There's so much room for growth, especially with women—not just those pregnant or nursing but those looking for healthy alternatives."

Shufelt is not out to bring back Prohibition—some 80% of his customers drink alcohol. Instead, he sees an opportunity to insert beer into settings where you'd typically have water, soda or iced tea: the weekday lunch, post-workout drink, your next road trip. Many customers use Athletic to moderate their alcohol consumption, alternating between standard drinks and Athletic brews to have a fun night without binging. And without packing on extra pounds. While a craft brew can top 200 calories per 12-ounce bottle, Athletic's Run Wild IPA has 65. (Michelob Ultra, Anheuser-Busch's 4.2% alcohol beer marketed to health nuts, has 95 calories.) "People make fun of me to my face. They say 'It's not for me, I'm not sober,'" Shufelt says. "I tell them, 'You don't have to be—this is your new weeknight beer. You can make fun of me all you want, if you just try it.'"

Shufelt grew up in the Wall Street stronghold of Darien, Connecticut, and played football at Middlebury College. "I sleepwalked my way into a financial career," he says. "I never intended to be an entrepreneur." In 2005, he graduated with an economics degree and traded health care stocks at Knight Capital in Jersey City. He later became a Chartered Financial Analyst and scored a job at billionaire Steve Cohen's hedge fund, Point72. It was both stressful and social. Shufelt attended work dinners four nights a week, plus barbecues, bachelor parties and weddings on weekends. "I stopped drinking for lifestyle reasons. I loved fitness and wanted to perform better at work," he says. "But the second I stopped, I felt like a total outsider because I had nothing in my hands—having a drink in your hand is part of the social fabric of society." In 2015, while out to dinner with his wife, Jackie, he lamented the lack of nonalcoholic craft beer. "She grabbed my shoulder and said, 'You should do it.'"

For the next two years, Shufelt spent his nights researching brewing, writing business plans and

HOW TO PLAY IT

By Taesik Yoon

Investors looking to profit from the healthy-living movement should consider supplement seller **Thorne HealthTech**, a fast-growing microcap that uses its proprietary health database and artificial intelligence to personalize supplement regimens for an increasingly health-obsessed populace. Many of its supplements contain nicotinamide riboside, a form of vitamin B3 that Thorne believes supports healthy aging. Sound like junk science? Maybe, but it's a great business. More than 5 million customers, thousands of professional athletes and over 100 professional sports and U.S. National Teams have used its supplements. The stock sells for a bargain seven times 2023 earnings estimate and has far more cash on hand than debt.

Taesik Yoon is editor of Forbes Special Situations Survey *and* Forbes Investor.

PATRICK WELSH FOR FORBES

searching for a brewmaster to join him. "People said I was absolutely crazy to build a brewery for nonalcoholic beer." He met future cofounder John Walker on an online brewing forum. "Bill put a not totally transparent help-wanted ad on the site for 'the most innovative sector in craft beer,'" says Walker, who also grew up in Connecticut, where he had worked for his family's restaurant business in Madison before becoming the head brewer at Second Street Brewery in Sante Fe, New Mexico. "When I called, he said, 'Don't hang up. Just hear me out. It's nonalcoholic beer.'"

Intrigued by the challenge, and the chance to return to Connecticut, Walker packed up his young family and drove east. With Shufelt's Wall Street connections, they raised $3 million from friends and angels, built a small 10,000-square-foot brewery in Stratford, Connecticut, and began experimenting.

Brewers traditionally make nonalcoholic beer by cooking or filtering standard brews, a process that removes the alcohol—and most of the flavor. Shufelt and Walker had a different idea: Tweak the grains, sugars, temperature and pH levels to brew a beer with big flavor and little alcohol from the start. After six months and more than 60 batches, Walker made what would become Athletic's Upside Dawn golden ale. By 2018, they were pitching local retailers and scored an early deal with several Whole Foods in Connecticut. On weekends, Shufelt would wake up as early as 3 a.m. and trek to triathlons and half-marathons to hand out samples. "Our go-to marketing strategy was bringing coolers to race finish lines, anything from a local 5K to an Ironman, and handing out hundreds of samples," he says. "We probably sampled almost 10,000 people that first summer and built a huge community of direct fans."

The startup hasn't been without its share of hangovers. In late 2018, Shufelt and Walker, having scored their first national order with retailer TotalWine, filled a truck with $50,000 worth of beer and then panicked that some cans might have been skunked. Because Athletic's brew is low in alcohol, a natural preservative, it takes only a single rogue microbe to taint the taste. "We were going out to a national chain. If we messed it up, it could destroy us forever. It could destroy the category," Walker says. Ultimately, they tossed the beer, hit up investors for more cash and spent more than $1 million on a tunnel pasteurizing machine for quality control.

Traditional craft brands including Samuel Adams, Lagunitas and Brooklyn Brewery have since jumped on the alcohol-free wagon. But Athletic has held firm, accounting for roughly 20% of all U.S. nonalcoholic beer sales in 2022. Previously unable to make enough beer to meet demand, Shufelt has poured his venture cash into two breweries (one in San Diego and the new facility in Connecticut) that will soon be able to make 650,000 barrels (about 215 million cans of beer) a year. Most revenue comes from grocery and liquor stores, including megachains Whole Foods and TotalWine. Athletic also sells to 30,000 restaurants and bars.

Digital retail is big too. Because the beers have less than 0.5% alcohol by volume, Athletic doesn't need to stress about complicated liquor and tax laws and can sell directly to consumers online. "The e-commerce business has taken on a life of its own," Shufelt says. "We've built a real community with hundreds of thousands of consumers and a huge data set." With that information trove, Athletic can email customers about new beers, special sales and exclusive flavors, and share company initiatives (Athletic, a certified B-Corp, donates 2% of sales to maintaining hiking trails).

Data also informs strategy: In 2020 Athletic bought a San Diego brewery from Ballast Point, in part because of statistics showing a high concentration of customers on the West Coast. E-commerce also gives Athletic a cheap and easy way to try out new beers (such as its blueberry IPA and an extra-special bitter) to identify winning flavors before undertaking a larger production run. Says Shufelt, "We get feedback straight from our customers and can test and improve new products before sending them to retailers."

With its two new breweries now fully operational, Athletic is rushing to get shelf space in more national grocers, big-box stores and liquor chains. There's room to grow. Shufelt says Athletic is now in just 15% of U.S. retailers licensed to sell beer. "His competitive advantage is his war chest of capital," says Greenwich Capital's Andrew Dickow. "There's no one else in the craft industry doing nonalcoholic beers that can match his marketing and advertising." Athletic is also looking to spots that historically haven't slung suds: convenience stores, coffee shops, delis, pharmacies—even vending machines. Says Shufelt: "There's a huge opportunity to go where beer has never gone before." Ⓕ

FINAL THOUGHT

"THE KEY TO MAKING HEALTHY DECISIONS IS TO RESPECT YOUR FUTURE SELF."

—A.J. Jacobs

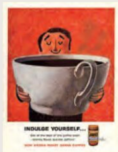
Déjà View

VICE BREAKERS

There has long been demand for guilt-free guilty pleasures. Here's a brief history of goods without the good stuff.

1896

Cereal magnate John Kellogg creates America's first commercial meat alternative, Nuttose, out of peanuts.



1905

German Ludwig Roselius treats coffee beans with benzene to create the first instant decaf, Sanka. By 1993, Sanka ranked fifth among instant coffees in the U.S., with $45 million in supermarket sales.

1952

No-Cal, America's first sugar-free, zero-calorie soda, hits shelves. Marketed to diabetics and housewives, the brand is a hit but eventually goes flat amid competition from Diet Pepsi and Coke's Tab.

1989

Philip Morris debuts Next ("nicotine extracted") cigarettes. The smokes, which had *some* nicotine, were discontinued soon after.

ALAMAY (2)

Japan: A New Way Forward

Businesses are well-positioned for further growth on the back of the government's new economic policy.

Japan is ushering in a "new form of capitalism" to reinvigorate its economy after more than two years of closed borders due to the pandemic. Japanese Prime Minister Fumio Kishida's new economic policy, unveiled last June, aims to achieve a "virtuous cycle of growth and distribution" through public-private partnership. As part of the policy guidelines, the government aims to pave the way for wage growth to offset the impact of inflation and boost investment in technology, startups, human capital and decarbonization.

On the back of these ambitious plans, the government revised its economic growth forecast for fiscal 2023 to 1.5%, up from the previous forecast of 1.1%. The overall GDP is projected to reach 558 trillion yen (US$4.31 trillion) this year, exceeding the pre-pandemic record of 554 trillion yen (US$4.28 trillion) in 2018. Companies are projected to increase investments by 5.0%, with exports and imports set to rise by 2.4% and 2.5% respectively, despite concerns of a global recession.

Focus on Long-Term Growth and Innovation

Central to Kishida's economic strategy is incentivizing long-term growth and strengthening Japan's capacity for innovation, particularly in industries such as biotech, smart cities, artificial intelligence (AI) and space technology. As part of this push to champion innovation, the government is also taking steps to cultivate a world-class startup ecosystem and help local startups succeed on the international stage.

Indeed, Japan has always been a leader in innovation and technology. Japanese companies continue to create maximum value at home while making their mark on the global stage.

Take THK, for example. The global automation giant has set the standard for innovation in factory automation technologies and processes since 1971. Today, the company is leading the way with solutions bolstered by AI and IoT applications, and more than 60% of its sales come from overseas markets.

THK's latest digital offerings include a customer communication platform that adds value to the purchasing process and an IoT platform that can predict faults in components and automatically minimize malfunctions without human intervention.

Meanwhile, soy sauce manufacturer Kikkoman has penetrated more than 100 countries since its establishment in 1917. Kikkoman Corporation Chairman and Honorary CEO Yuzaburo Mogi attributed the company's long-term growth and success to the foresight of its top management. He says, "Now more than ever, it is critical for top management to have a clear grasp of the global business environment and an ability to see ahead."

Kikkoman aims to keep expanding in Asia, South America and eventually Africa in the next decade.

Global expansion is also on the agenda of Japanese advertising firm ADREX, founded in 2018. The company's client-first philosophy, coupled with its business transparency, has contributed to its success. While many young enterprises are focused on immediate profits, ADREX believes in investing in long-term growth. The company celebrated a couple of milestones recently: the launch of its first in-house data analytics tool and the setup of its first overseas base in New York City.

With the domestic economy finally reopening—alongside government support—Japanese businesses are poised for further growth in the year ahead.

Global Vision in an Era of Constant Change

Youthful CEOs may be grabbing headlines these days, but the best perspective on today's business trends comes from the most experienced voices. No one in Japan has seen more changes in the business environment than Yuzaburo Mogi, the Chairman and Honorary CEO of Kikkoman Corporation.

Mogi is a true internationalist, the first Japanese to receive an MBA from Columbia Business School (1961), and the driving force behind his company's early expansion into overseas markets. His perspective on both domestic and global issues continues to command great respect in the Tokyo business community.

CEO's Job: To Steer Through the Fog

How does Mogi see the challenges facing today's executives?

"I think this is a very difficult situation. Now more than ever it is critical for top management to have a clear grasp of the global business environment and an ability to see ahead. In a sense, that was always the case, but now I think it is even more essential. Essential but increasingly difficult! Management has so many options… there is so much to analyze! We need to pay close attention not only to global business trends, but to geopolitical shifts as well."

"Of course, management skills are still important, but I think foresight is more important. Things are much more complicated now than they were 30 years ago. Back then, there was much less risk, whereas now there are risks everywhere. And the future will be even more complicated. This is why I say that an ability to see ahead is one of the key requirements for corporate leaders."

"Now more than ever it is critical for top management to have a clear grasp of the global business environment and an ability to see ahead."

Research, Experience, and Instinct Yield Strategic Action

Few executives have the foresight that Mogi displayed back in 1973 when, as a young manager, he convinced his company to set up a plant to produce soy sauce in the U.S. At that time no Japanese company had a full-scale plant in America, and soy sauce was all but unknown. However, Mogi had conducted his own market research while still a student in New York, and his instincts told him that Kikkoman's business would succeed in America. He didn't rely on instincts alone: "I analyzed the risks from a dozen different perspectives. I had data and graphs and projections, but underlying it all I had my own experience, which told me that if we set up in the US everything would ultimately work out."

His hunch proved correct, and that first overseas plant became a springboard, launching Kikkoman as a global force in the food business.

"Kikkoman is sold in over 100 countries," Mogi says, "But we have so much room to grow! Even in the U.S. and Europe, our two biggest markets, there is still plenty of room for growth."

Continuing to Grow Globally and Strategically

What other markets is he looking at?

"My vision for our international business is to keep expanding in Asia, then gradually expand in India, South America, and in the next decade, Africa."

That is an ambitious plan for any company, but Mogi insists that soy sauce is an all-purpose seasoning that can be enjoyed anywhere, in any culture and with any kind of cuisine. He is convinced that bottles of Kikkoman soy sauce will ultimately grace dining tables around the world.

"We will continue to grow globally and strategically, as we always have—examining risks carefully, localizing our products and our operations appropriately, then meeting challenges flexibly."

Considering today's geopolitical instability, economic insecurity, and rapidly changing business environment, isn't planning for two decades of future expansion a bit risky?

Mogi smiles knowingly. "Yes—calculated risk! Without risk, there is no growth."

Yuzaburo Mogi
Honorary CEO and Chairman of the Board

Yuzaburo Mogi is a descendant of one of the founding families of Kikkoman, which is among the oldest continually running businesses in Japan. Mogi holds an MBA from Columbia University.

THK Rises to Meet Industry's Demand for Prediction Detection Devices

Global automation giant announces transition to a manufacturing and innovative services company.

Since 1971, THK has set the standard for innovation in factory automation technologies and processes with its pioneering Linear Motion (LM) Guide technology. Today, THK is leading the way with solutions bolstered by AI and IoT applications that give manufacturers a heads-up on potential breakdowns while generating constructive feedback for THK engineers, which they then apply to improve products.

Omni Solutions

Two THK digital offerings making headways are Omni THK, a customer communication platform that adds value to the purchasing process, and OMNIedge, an IoT platform that can predict faults in components and automatically minimize malfunctions without human intervention. These are working to transform THK into a "manufacturing and innovative services company."

"We want to make it easier for machinery developers to make their products," Akihiro Teramachi, CEO and President of THK says. "Automotive-related makers are asking us to install the system in their factories worldwide, and OMNIedge lets us provide a variety of services directly to the people who actually use the products, in addition to the machinery and equipment manufacturers who have been our main customers in the past."

"We are responding to the need for a system that can supply materials in a decentralized manner."

Global Expansion

The demands of THK's business compelled the adoption of a local procurement system for each region worldwide. "We are responding to the need for a system that can supply materials in a decentralized manner," explains Teramachi. "The logistics system has been disrupted, making it difficult for goods to flow and, in many areas, lockdowns have interrupted shipments, resulting in shortages of goods."

With more than 60% of THK's sales coming from overseas markets, the company is working to improve the quality and reliability of products produced everywhere it operates—with positive results soon expected in Vietnam and India.

New Businesses

THK technology is also being expanded to fields close to consumer goods, including automobiles, medical equipment, aircraft and service robots, plus for risk reduction from natural disasters and climate change. Seismic isolation, damping equipment and renewable energy-related products are a growth sector.

"These systems leverage our core products, including LM Guides, and reflect THK reliability, experience, creativity and technological expertise," says Teramachi. They can stabilize entire structures in the event of an earthquake, protect valuable art and cultural assets and provide quality control at the micro level in the manufacturing of semiconductors.

Exceeding Expectations

THK's transition to a manufacturing and innovative services company is having a positive effect on the bottom line. Medium- to long-term environment-related investments have helped meet the needs of increased semiconductor-related demand, accelerated automation and robotization and the growing popularity of electric vehicles.

"We have been working since FY2022 with an eye toward the five-year period ending in FY2026," explains Teramachi. "The entire company is working to achieve our targets of 500 billion yen (US$3.87 billion) in consolidated net sales, 100 billion yen (US$773.30 million) in operating income, 17% Return on Equity and 590 yen (US$4.56) in Earnings Per Share."

Akihiro Teramachi
Chief Executive Officer and President, THK

Akihiro Teramachi graduated from Keio University in 1971 and joined THK Co., Ltd. in 1975. He became a Director in 1982, Vice President in 1994 and President in 1997.

www.thk.com

Honest, meticulous operations are a Japanese specialty. That might well be due to the tenacity born of a spirituality rooted in the teachings of Zen Buddhism, says ADREX President Hayato Tashiro.

ADREX: Taking on the United States Following Exponential Growth in Japan's Digital Advertising Market

Full transparency and its client-first philosophy ensure that ADREX clients are fully informed.

Japanese advertising company ADREX has managed to achieve astonishingly fast growth by putting clients' interests first and making all its advertising operations transparent. According to ADREX President and CEO Hayato Tashiro, "The Japanese advertising industry has become dominated by a sales-first mentality, and company structures are all sealed in a black box." Building on his success in Japan, Tashiro is taking that truly client-first philosophy global.

Revolutionary Transparency

"Why cannot things be out in the open?" This thought had plagued Tashiro long before he decided to open his own advertising company, as he tried to deal with a bad-faith agency that kept all its costs and operations sealed in a black box. How are measures progressing in relation to the invested advertising budget? How are budgets consumed across multiple companies? What is the basis for the figures offered up as results? The answers to all these questions were hidden by the secrecy of the old Japanese advertising system.

Digital Ads Show Numerical Results

Tashiro got fed up with the advertising agency industry and its questionable practices. An industry full of businesses trumpeting vague results with no explanation as to how they were generated. As a result, Tashiro started his own digital ad agency and has since succeeded with innovative advertising operations that break the traditional mold by offering full transparency.

"All digital ads can show numerical results. We understand what measures lead to how much profit and how cost-effective they are. We can convey all that information to our customers, so they are better informed," Tashiro says.

In 2018, Tashiro founded and became the President of ADREX, instilling it with his powerful client-first philosophy.

"We keep our cards on the table because we consider ourselves to be our clients' growth partner."

A Growth Partner

Those who joined him were like-minded star players who formerly worked for major advertising agencies LINE and Google. Tashiro established a system to make everything visible to clients, from measures, status and effects to the company's margins. These glass-box advertising operations are characterized by support for client accounts by advertising operations and bringing things in-house.

"ADREX does not sit across from its clients as an agency but stands beside them to help them grow. We keep our cards on the table because we consider ourselves to be a growth partner supporting our clients' success with advertising operations know-how."

Aiming to be America's Top Japanese Ad Agency

ADREX's main focus is the benefit of future growth rather than immediate profits, and that focus is paying off. Making business operations transparent has become a means of demonstrating the company's honest and meticulous operations to clients and its greatest weapon in winning their trust. The company's sales grew from 1.12 billion yen (US$8.66 million) to 3.84 billion yen (US$29.70 million) over the three years of 2020-22.

In January 2023, ADREX launched its first in-house product, AdRex©, which enables automated analysis of more diverse access logs. This tool will enable traditionally difficult in-depth, automated social media trend analysis and will also expand the company's line of business.

This innovation is no longer limited to Japan as Tashiro has decided to move his base of operations to New York where he has opened a branch. The goal is to become the top Japanese global advertising agency in the U.S.

"We are not just a Japanese company adept at handling precise numbers, but we have also succeeded in Japan, with all its strict advertising regulations, by deciding to operate in a client-first, transparent way. We are confident that this client-first service model will have a natural global appeal."

Hayato Tashiro, President

Hayato Tashiro became the top sales executive at IT venture Collabos. Then, in his late 20s, he established Cyber Children, becoming the youngest head of a 30-billion-yen (US$232 million) company. In 2018, he founded ADREX and became its President. In 2022, ADREX opened a branch office in New York, where it is now based.

https://ad-rex.com

By William Baldwin

Photograph by Levon Biss for Forbes

Shareholders of the World, Unite

Most investors are passive bystanders in boardroom battles. **TUMELO** wants to get them involved—and take fund managers out of the ideological crossfire.

Rebel with a Cause

Chief executive Georgia Stewart, at Tumelo's Bristol, England, headquarters, is already counting green wins: Four anticoal candidates were elected last year to the board of Australian utility AGL Energy.

G

Georgia Stewart, in 2017 a final-year student at Cambridge University, campaigned to have the endowment sell off its fossil fuel stocks. That didn't get far. "When I was there they divested from tar sands," she says dismissively. Anyway, she goes on, "divestment is not necessarily the best outcome. You just end up with shareholders who don't care."

Out of those sour grapes came a business idea. Stewart, 27, is the chief executive of Tumelo, a five-year-old Bristol, England, firm that gives investors a platform through which to express their views in proxy contests. "We want more transparency and accountability," she says.

With 57 employees and $22 million in venture capital, Tumelo is not yet in the black but is positioned to get there. It finds itself on a battlefield in which do-gooders promoting causes like carbon reduction and gender equity are at war with anti-wokers who say corporations should have no mission except making a profit.

In theory, the shareholders of Exxon

Mobil control it and can vote to replace the oil wells with solar panels if that's what they want. Two problems here. One is that you probably own your shares indirectly. If you have $100,000 in an S&P 500 index fund, you have 12 shares of Exxon, but you don't get the proxy. The fund operator does.

And then, if you did get the voting rights, what would you do with them? Did you have an opinion on Proposal No. 6 at last year's Exxon meeting, "Reduce company emissions and hydrocarbon sales"? Do you have time to read 500 proxy statements?

Tumelo steps in the middle, collecting fees from brokers and funds that want to offer a voting feature as a selling point. The retail client gives Tumelo read-only access to a brokerage account, then selects from a menu of nine policy choices. There's one espousing an anticarbon stance, another promoting worker rights and so on. The fund gets a report collating all the preferences and share counts of its Tumelo-active investors. The fund manager can then, with the help of proxy advisory firms like Glass Lewis, translate a policy into a vote on each proposal.

So far Tumelo has some degree of buy-in from Legal & General, a $1.6 trillion asset manager in the U.K.; Cushon, a London investment firm promoting what it calls carbon-free pensions; and the international arm of Fidelity Investments. Tumelo hopes to announce its first U.S. partner soon.

At the moment these shareholder counts are wishes, not commands; in both the U.K. and the U.S., the voting power unmistakably resides with the fund manager. Indeed, in Tumelo's early days flow-through voting was too radical an idea and the firm did no more than help investment firms inform their clients how various funds were behaving in proxy contests. "If our stewardship started out giving votes, [money managers] would have laughed us out of the room," Stewart says. But now, she says, the world is moving powerfully in the direction of shareholder democracy.

Stewart concocted this business with the help of two risk-loving Cambridge classmates, Will Goodwin and Benjamin King. Goodwin is now head of U.S. operations. King wrote the first pieces of a software package that now runs to 1.6 million lines of code and just quit to take up paragliding.

It was a cheapskate operation. In the first year the threesome holed up in the basement of Goodwin's parents' house and got free advice from a business incubator attached to the University of Bath. Stewart took the bus to get to the investment office of musician Peter Gabriel to land some venture capital.

Lacking the money for a brand search, the founders typed "belief" into Google Translate and scrolled through the languages, looking for a word whose URL was not taken and which did not mean something awful in one of the other 133 languages. Sesotho, a language spoken primarily in southern Africa, came through.

Tumelo's timing is good. Money managers who just a few years ago might have bristled at the idea of letting customers vote seem to be welcoming the idea today. Consider the plight of Larry Fink, who oversees $9 trillion of other people's money as the head of BlackRock. He has made pronouncements on how corporations must cut carbon emissions and pursue social justice. Now he has money man Vivek Ramaswamy plus a gang of state treasurers complaining that BlackRock has no right to inject left-wing politics into boardrooms.

Solution: Have the clients do the crusading. BlackRock has a system to let institutional clients make proxy choices. Vanguard Group says it's going to experiment with giving small investors in its funds a say.

No problem if the giant brokers and fund managers create their own systems for tracking investor wishes; once they pave the way, smaller outfits wanting to offer a voting feature can turn to Tumelo for a ready-made solution—and get the portfolio manager out of the middle of ideological battles. "A fund manager invested in Walmart did not expect they would have to vote on abortion last year. That has nothing to do with the investment thesis," Stewart says.

It's easy to see where Stewart and her cofounders envision that democracy could take the corporate world between now and when they cash in their pension funds. "Retirement is not just the number in your bank account," she says. "What about your family's employment, the air you breathe, your health?"

But if savers want to hand their proxies to some raider promising fatter dividends, never mind the workers or the atmosphere, so be it. "Does Greta [Thunberg] or Vivek [Ramaswamy] speak for you?" Stewart asks. "At the moment you can't make that decision." F

HOW TO PLAY IT

By William Baldwin

Worried about the climate? Get your S&P index from the **Engine No. 1 Transform 500 ETF**, whose sponsor used its proxies and its powers of persuasion in 2021 to get three dissidents onto the Exxon Mobil board. Those in the opposing camp can buy Vivek Ramaswamy's **Strive 500 ETF**, which vows to "focus on profits over politics/ESG." Both charge 0.05% in annual expenses. Third option: Buy the slightly cheaper S&P funds (expenses, 0.03%) in the BlackRock iShares and Vanguard lineups, and contribute your savings to a cause you believe in. In corporate governance BlackRock leans leftward, while Vanguard is closer to neutral.

William Baldwin is Forbes' *Investment Strategies columnist.*

FINAL THOUGHT

"WHAT PEOPLE HAVE THE CAPACITY TO CHOOSE, THEY HAVE THE ABILITY TO CHANGE."

—Madeleine Albright

PATRICK WELSH FOR FORBES

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Forbes

AMERICA'S TOP WOMEN WEALTH ADVISORS

BY **SERGEI KLEBNIKOV** AND **SHOOK RESEARCH**

The stock market hangover from 2022 has not yet lifted. Wall Street is bracing for more volatility as inflation remains high and rate hikes from the Federal Reserve are expected to continue. Recent studies by Wells Fargo and Vanguard show that women tend to have a more disciplined approach to investing. Not only are women more patient and trade less than men—often leading to better risk-adjusted returns—but they are also more risk-averse when it comes to asset allocation. The seventh annual ranking of Forbes/SHOOK Top Women Wealth Advisors features 1,697 women collectively managing assets of nearly $2.3 trillion. Forbes' list was compiled by SHOOK Research, which uses quantitative and qualitative data, including interviews, to rank advisors.

1. Colleen O'Callaghan
J.P. Morgan Wealth Management
NEW YORK, NY
$2.4B

2. Rebecca Rothstein
Merrill Private Wealth Management
RENO, NV
$3.9B

3. Susan Kaplan
Kaplan Financial Services
NEWTON, MA
$2.2B

4. Deborah Montaperto
Morgan Stanley Private Wealth Management
PALM BEACH, FL
$29.1B

5. Laila Pence
Pence Wealth Management
NEWPORT BEACH, CA
$1.6B

6. Louise Gunderson
UBS Private Wealth Management
NEW YORK, NY
$3.7B

7. Lori Van Dusen
LVW Advisors
PITTSFORD, NY
$1.8B

8. Debra Brede
D.K. Brede Investment Management
NEEDHAM, MA
$1.2B

9. Judy Fredrickson
UBS Private Wealth Management
WAYZATA, MN
$3.4B

10. Elaine Meyers
J.P. Morgan Wealth Management
SAN FRANCISCO, CA
$3.3B

11. Melissa Corrado Harrison
UBS Private Wealth Management
DENVER, CO
$1.2B

12. Patti Brennan
Key Financial
WEST CHESTER, PA
$1.5B

13. Christina Boyd
Merrill Lynch Wealth Management
WAYZATA, MN
$1.6B

14. Emily Rubin
UBS Private Wealth Management
NEW YORK, NY
$2.2B

15. Mary Mullin
Merrill Lynch Wealth Management
BOSTON, MA
$1.5B

16. Sharon Oberlander
Merrill Lynch Wealth Management
CHICAGO, IL
$1.6B

17. Mary Deatherage
Morgan Stanley Private Wealth Management
CORAL GABLES, FL
$2B

18. Leslie Lauer
UBS Private Wealth Management
ATLANTA, GA
$4.6B

19. Melissa Spickler
Merrill Lynch Wealth Management
BLOOMFIELD HILLS, MI
$1.3B

20. Xi Qiao
UBS Wealth Management
SAN FRANCISCO, CA
$1.7B

No. 30

REBECCA GLASGOW

UBS PRIVATE WEALTH MANAGEMENT
Atlanta, GA • $4.6 billion

"Women pay attention to all aspects of clients' lives and not necessarily just the financial ones. That builds trust in the relationship."

[redacted]

21. Virgil Kahl
Spring Ridge Financial Group
WYOMISSING, PA
$975M

22. Michelle Mayer
Merrill Private Wealth Management
NAPLES, FL
$2B

23. Donna Di Ianni
Merrill Lynch Wealth Management
ASPEN, CO
$1.7B

24. Margaret Wright
Truist
ATLANTA, GA
$1.6B

25. Johanna Walters
Merrill Lynch Wealth Management
BLUE BELL, PA
$5.4B

26. Tracey Gluck
J.P. Morgan Wealth Management
LOS ANGELES, CA
$1.9B

27. Jacqueline Willens
UBS Private Wealth Management
NEW YORK, NY
$1B

28. Corina Davis
Merrill Lynch Wealth Management
SEATTLE, WA
$945M

29. Gillian Yu
Morgan Stanley Private Wealth Management
SAN FRANCISCO, CA
$9.5B

30. Rebecca Glasgow
UBS Private Wealth Management
ATLANTA, GA
$4.6B

31. Inna Kelly
Morgan Stanley Wealth Management
SAN FRANCISCO, CA
$1.1B

32. Nazie Saffari-Moini
Merrill Lynch Wealth Management
BEVERLY HILLS, CA
$759M

33. Sara Wendt
Miracle Mile Advisors
LOS ANGELES, CA
$2.8B

34. Kathleen Roeser
Morgan Stanley Wealth Management
CHICAGO, IL
$1.6B

35. Ali Phillips
Obermeyer Wood Investment Counsel
ASPEN, CO
$1.9B

36. Diana Menaker
J.P. Morgan Wealth Management
MIAMI, FL
$761M

37. Gail D. Reid
Ameriprise Financial Services
GLENDALE, CA
$1.3B

38. Louise Armour
J.P. Morgan Wealth Management
PALM BEACH GARDENS, FL
$1.1B

39. Patricia Bell
Merrill Lynch Wealth Management
SHORT HILLS, NJ
$765M

40. Kathleen Youngerman
Morgan Stanley Private Wealth Management
ST. LOUIS, MO
$541M

41. Jennifer Garcia
Wells Fargo Advisors
ENCINO, CA
$1.6B

ILLUSTRATIONS BY MICHAEL HOEWELER FOR FORBES

Morgan Stanley

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We are proud of the Morgan Stanley Financial Advisors named to this year's Top Women Wealth Advisors & Top Women Wealth Advisors Best-In-State lists recognizing the best Financial Advisors in the country.

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Forbes America's Top Women Wealth Advisors & Top Women Wealth Advisors Best-In-State

Source: Forbes.com (Awarded Feb 2023) Data compiled by SHOOK Research LLC based on time period from 9/30/21–9/30/22.

For more information on award methodology and criteria, scan QR code.

No. 41

JENNIFER GARCIA

WELLS FARGO ADVISORS
Encino, CA • $1.6 billion

"Naturally women tend to be more empathetic. In my experience as an advisor, more is disclosed to a woman because there isn't as much pride involved, so conversations end up being a lot deeper."

[redacted]

42. Lisa Detanna
Global Wealth Solutions Group of Raymond James and DH Consulting Group of Raymond James
BEVERLY HILLS, CA
$2.1B

43. Sharon Klein
Wilmington Trust
NEW YORK, NY
$3.3B

44. Courtney Liddy
UBS Wealth Management
SAN DIEGO, CA
$1.2B

45. Maria Brisbane
Merrill Private Wealth Management
NEW YORK, NY
$923M

46. Diane Hart
UBS Wealth Management
PASADENA, CA
$748M

47. Liz Weikes
J.P. Morgan Wealth Management
NEW YORK, NY
$4.8B

48. Anna Winderbaum
Morgan Stanley Private Wealth Management
NEW YORK, NY
$2B

49. Margaret Starner
The Starner Group of Raymond James
CORAL GABLES, FL
$1.2B

50. Kristin Nicholson
First Republic Investment Management
SAN FRANCISCO, CA
$1.3B

51. Valerie Houts
Merrill Lynch Wealth Management
SAN FRANCISCO, CA
$63.3B

52. Kathy Grasmeder
Morgan Stanley Wealth Management
GLENS FALLS, NY
$1.1B

53. Jessica Guo
UBS Wealth Management
WELLESLEY, MA
$547M

54. Diane Compardo
Moneta
ST. LOUIS, MO
$2B

55. Elizabeth Armitage
Merrill Lynch Wealth Management
CINCINNATI, OH
$1.4B

56. Mary DiChristofano
Morgan Stanley Private Wealth Management
CHICAGO, IL
$3.8B

57. Rhonda Finby
Wells Fargo Advisors
SEAL BEACH, CA
$500M

58. Maureen Raihle
First Republic Investment Management
PALM BEACH, FL
$1.3B

59. Aimee Cogan
Morgan Stanley Wealth Management
SARASOTA, FL
$1.2B

60. Lisa Petrie
TSG Wealth Management
INCLINE VILLAGE, NV
$690M

61. Julia Wan
UBS Wealth Management
SAN FRANCISCO, CA
$479M

62. Emily Bach
Morgan Stanley Wealth Management
ORINDA, CA
$1.1B

63. Teri Harmon
Wells Fargo Advisors
SEAL BEACH, CA
$1.1B

64. Anouchka Balog
Morgan Stanley Wealth Management
LAGUNA NIGUEL, CA
$991M

65. Debbie Jorgensen
Merrill Lynch Wealth Management
SAN FRANCISCO, CA
$2B

66. Kimberly Hunter
Wells Fargo Advisors
SANTA ROSA, CA
$916M

67. Danielle Prunier
Merrill Private Wealth Management
CENTURY CITY, CA
$1.1B

68. Susan Kim
Ameriprise Financial Services
VIENNA, VA
$767M

69. Melinda Johnston
Merrill Lynch Wealth Management
FORT WORTH, TX
$1B

70. Andrea Bevis
UBS Private Wealth Management
BOSTON, MA
$1.2B

71. Ann Marie Etergino
RBC Wealth Management
CHEVY CHASE, MD
$1.1B

72. Theresa Ward
Merrill Private Wealth Management
MINNEAPOLIS, MN
$1.9B

73. Beth Scanlan
Morgan Stanley Private Wealth Management
SAN FRANCISCO, CA
$560M

74. Rachel Gottlieb
UBS Private Wealth Management
NEW YORK, NY
$1.2B

75. Krystal Julius
Merrill Lynch Wealth Management
WAYZATA, MN
$2.3B

76. Dana Nightingale
Obermeyer Wood Investment Counsel
DENVER, CO
$1.9B

77. Megan Bailey
Merrill Lynch Wealth Management
BLUE BELL, PA
$5.4B

78. Jenny Tsai
Morgan Stanley Private Wealth Management
PASADENA, CA
$890M

79. Joanne Zhong
UBS Wealth Management
SAN FRANCISCO, CA
$2.5B

80. Kim Hoffman
Edward Jones
WILSON, NC
$538M

81. Donna Joyner
Merrill Lynch Wealth Management
ALPHARETTA, GA
$1.2B

82. Linda Modico
UBS Wealth Management
NEW YORK, NY
$6.1B

83. Susan Kingsolver
Morgan Stanley Private Wealth Management
NEW YORK, NY
$2.2B

84. Karen Breed
UBS Wealth Management
CINCINNATI, OH
$1.8B

85. Kimberlee Orth
Ameriprise Financial Services
WILMINGTON, DE
$660M

86. Becky McCormick
Graystone Consulting from Morgan Stanley
GREEN BAY, WI
$1.5B

87. Teresa Jacobsen
UBS Private Wealth Management
STAMFORD, CT
$1.2B

88. Melissa Combs
Wells Fargo Advisors
WINSTON-SALEM, NC
$890M

89. Wendy Holmes
UBS Private Wealth Management
NEW YORK, NY
$1.3B

90. Dianna Smith
Morgan Stanley Wealth Management
LEAWOOD, KS
$1.4B

91. Alma Guimarin
Morgan Stanley Wealth Management
SAN JOSE, CA
$1.2B

92. Christine McGinley
UBS Wealth Management
MOUNT LAUREL, NJ
$1B

93. Christi Edwards
Morgan Stanley Wealth Management
NASHVILLE, TN
$1.1B

94. Deborah Danielson
Danielson Financial Group
LAS VEGAS, NV
$359M

95. Alyssa Moeder
Merrill Private Wealth Management
NEW YORK, NY
$4.5B

96. Nancy Daoud
Ameriprise Financial Services
OXFORD, CT
$722M

97. Christine Heim
Merrill Lynch Wealth Management
FLORHAM PARK, NJ
$546M

98. Julie Shechtman
Morgan Stanley Wealth Management
GLENVIEW, IL
$496M

99. Hanane Lemlih
Wells Fargo Advisors
MCLEAN, VA
$1B

100. Holly Wallace
Merrill Lynch Wealth Management
NEW YORK, NY
$573M

[redacted]

No. 48

ANNA WINDERBAUM

MORGAN STANLEY PRIVATE WEALTH MANAGEMENT
New York, NY • $2 billion

"The good news is now that the Fed has raised rates meaningfully, we are able to help clients add fixed income into their portfolios and lock in tax-free yields that we really haven't seen in a while."

ILLUSTRATIONS BY MICHAEL HOEWELER FOR FORBES

For the full ranking, please visit: forbes.com/best-in-state-women-advisors

A New Hope.

By **Maneet Ahuja** and **Hank Tucker**

TO BOOST MORE TALENTED BLACK EXECUTIVES INTO THE STRATOSPHERE OF AMERICAN BUSINESS, ARIEL INVESTMENTS'

MELLODY HOBSON

PLANS TO INSTALL THEM AT THE TOP OF EXISTING BUSINESSES—AND CONNECT THEM WITH THE CUSTOMERS AND CAPITAL TO SUCCEED.

THE PROFILE

Photographs by **Jamel Toppin** for Forbes

A

AS A SIXTH GRADER IN CHICAGO PUBLIC SCHOOLS IN 1980, MELLODY HOBSON WAS MORTIFIED BY THE SNAGGLETOOTH THAT PROTRUDED WHEN SHE SMILED. IT SIMPLY DIDN'T FIT THE FUTURE SHE ENVISIONED FOR HERSELF.

She asked her friends who wore braces for the name of their orthodontist, and without her mother knowing, made an appointment, walking from school to his office. He said she'd have to wear braces for years and that it would cost $2,500—a monumental sum for Hobson's struggling single mother, who was raising her and her five siblings in a home where money was so tight the electricity was periodically shut off because of unpaid bills. No matter. That tooth was going to be fixed: Hobson and the orthodontist agreed to a payment plan of about $50 per month.

In eighth grade, determined to go to one of Chicago's best private high schools, she asked friends where they were applying, called the schools and arranged to tour them with her mother in tow. She wound up at St. Ignatius College Prep on a scholarship.

In 2020, in the wake of the nationwide George Floyd protests, JPMorgan Chase CEO Jamie Dimon wanted to aid Black businesses. He called Hobson, by then a JPMorgan board member, hoping to tap into that same sheer force of will. "I said, 'We really need a sustainable investment effort—totally for-profit—to invest in minority companies,'" Dimon recalls. He told her he wanted Ariel Investments, where Hobson is co-CEO and president, involved, then rattled off other minority-owned businesses as potential partners.

Hobson was characteristically blunt but upbeat. "I said to him, 'Jamie, [some of] these companies are gone,' which he did not know. 'But I think I have an idea.'" She drafted a four-page memo outlining "Project Black" and emailed it to Dimon on September 8, a week after his initial call.

The idea: Ariel would form a private equity fund to invest in middle-market companies and provide them the capital—and, more crucially, the contacts—needed to sell to large corporations eager to diversify their supply chains. Dimon was sold instantly. "When people talk about Black businesses, they talk about access to capital, access to capital, access to capital," Hobson says. "Access to *customers* may be more important." Currently, a meager 2% of corporate spending goes to minority-owned suppliers.

There's another conventional wisdom–busting aspect of this strategy. Black entrepreneurs start lots of businesses, but very few grow large enough to become suppliers to the Walmarts of the world; of the 500 or so private companies in the U.S. with more than $1 billion a year in sales, just five are Black-owned.

Project Black aims to leapfrog the size barrier by acquiring companies with $100 million to $1 billion in sales and, if they're not already minority-run, installing Black and Latino executives to manage them—"minoritizing" the companies, as Hobson puts it.

These firms should then be well positioned to acquire smaller minority-owned enterprises and grow into competitive top-tier suppliers—satisfying big companies' supply chain needs and diversity goals at the same time.

On February 1, Ariel closed its first Project Black fund with $1.45 billion in commitments from AmerisourceBergen, Amgen, Lowe's, Merck, NextEra, Nuveen, Salesforce, Synchrony, Truist, Walmart, the Qatar Investment Authority, Hobson's family foundation and former Microsoft CEO Steve Ballmer, who put $200 million in. That's all on top of an up to $200 million pledge that JPMorgan made in 2021 to get the ball rolling.

That $1.45 billion is more than five times the size of the average first-time private equity fund and brings assets under management at Ariel, including its mutual funds and separately managed accounts, above $16 billion. *Forbes* figures Hobson's nearly 40% stake in what is the nation's oldest (founded 1983) Black-owned investment shop is worth $100 million. (John W. Rogers Jr., the founder, chairman and co-CEO, owns 34%.)

Like so much else the 53-year-old Hobson has done during her one-of-a-kind career, the Project Black memo was neither off-the-cuff nor a solo production. Instead, it was built on years of relentless hard work, analysis and networking. After the May 2020 murder of Floyd by a Minneapolis policeman, Hobson organized Sunday Zoom calls with a cadre of top Black business executives to brainstorm ways that capitalists could narrow the racial wealth gap—and make a profit. "I said, 'This hasn't been done before.'"

One Zoom regular was Leslie A. Brun, the 70-year-old Haiti-born founder and former head of Hamilton Lane, which now oversees $824 billion in alternative investments. He's CEO (and, with Hobson, cofounder) of Ariel Alternatives, which is running Project Black. "We could change the paradigm and the conversation about what it means to be a minority-owned business," he says, "because if you look at the federal definition, it's small and disadvantaged. We want to be large and advantaged."

AMONG value investing firms, Ariel Investments is known for a patient, contrarian buy-and-hold approach. Turtles and tortoises—metal figurines, wooden replicas, stone sculptures and tortoiseshell imprints—decorate nearly every office and conference room in both its Chicago headquarters and Hobson's main office in San Francisco's Presidio.

Yet Hobson's rise at Ariel was anything but slow. Founder Rogers hired her right out of Princeton and let her know, when she was just 25, that he planned to make her its president by the time she was 30. "Whenever you have a star, you want them to see a career path—that's basic business 101," says Rogers, who first spotted Hobson's promise when she was a high school senior and he was recruiting Chicago students for Princeton.

Even in grade school, Hobson fixated on education as her ticket to a secure future. She was by far the youngest of Dorothy Ashley's six children—her oldest sibling is more than two decades her senior. Hobson describes her mother as loving, optimistic (sometimes unrealistically so) and hard-working. Ashley tried to make a living renovating condos, but between discrimination and spotty money management skills, she couldn't always pay the bills. Hobson's childhood was peppered with multiple evictions and utility shut-offs.

"It felt extremely insecure," says Hobson, who has become a powerful advocate for financial literacy. "I ended

MELLODY HOBSON AND LES BRUN ARE PHOTOGRAPHED IN FRONT OF "THE SUBTLETY OF A TRAIN WRECK" BY GARY SIMMONS

Back in the Game

Leslie A. Brun *(left)* was happily managing his family investments and serving on boards (including Ariel Investments') when Hobson asked him to become CEO of Ariel Alternatives and run Project Black. "It was a no-brainer to say yes," he declares.

The Patient Investor

Since founding Ariel Investments 40 years ago, John W. Rogers Jr. has followed the wisdom of Warren Buffett. When the market crashed in 1987, Rogers loaded up on stocks, mindful of Buffett's advice to "be greedy when others are fearful."

up knowing way more about our life than any child should know. I knew what our rent was. I knew when our phone bill was late."

Hobson had been accepted to both Harvard and Princeton and was set on Harvard until she attended a Princeton recruitment dinner, organized by Rogers, at the Chicago Yacht Club. Venture capitalist Richard Missner sat down beside her and declared that he intended to change both her choice of college and her life. He began calling her every day, eventually inviting her to a breakfast for one of his Princeton classmates—then-U.S. Senator and former New York Knicks star Bill Bradley—seating her next to the guest of honor.

"Mellody made a very deep impression on me," Bradley says. "She is where she is today because of the values she held as a high school senior, her incredible discipline and a positive energy level that made people want to be around her." Hobson chose Princeton, and a lasting friendship was born.

When Bradley ran for the Democratic presidential nomination in 2000, Hobson was a tireless fundraiser, impressing another Bradley backer: Starbucks billionaire Howard Schultz. Hobson joined Starbucks' board in 2005 and became nonexecutive chair in 2021, making her the only Black woman currently heading an S&P 500 board. "The currency of the way she carries herself is steeped in emotional intelligence," Schultz says. "Mellody is always present. She puts on no airs. She's as comfortable with a part-time barista as she is with any high-profile person you can mention."

Schultz introduced Hobson to DreamWorks Animation CEO Jeffrey Katzenberg, who in turn recruited her for his board. Hobson became chair of DreamWorks in 2012 and in 2016 negotiated its sale for $3.8 billion (a 50% premium to its stock price before talks became public) across from Comcast CEO Brian Roberts, a famously tough bargainer. "She had never bought or sold a company before, but you would have thought she had been doing this her whole life," Katzenberg marvels.

The movie connection presumably gave Hobson something to talk about when she met *Star Wars* creator George Lucas at an Aspen, Colorado, business conference in 2006. On their first dinner date they talked about their shared commitment to promoting educational access. When she married the billionaire in 2013 at his Skywalker Ranch in California, Bradley walked her down the aisle. (Lucas, Hobson and their 9-year-old daughter have their primary homes in California, as well as a penthouse in Chicago.)

It's a lifelong pattern: One A-list friend or business associate is wowed and introduces Hobson to another, who repeats the process. She met Formula 1 champion Sir Lewis Hamilton in 2007 through Lucas, a racing enthusiast; she now calls the British driver her "little brother" and included him in the new Denver Broncos ownership

THE COMEBACK KING

IN AN ERA when dyed-in-the wool value investing strategists have been pushed aside for sexier growth and quantitative managers, John W. Rogers Jr.'s patient contrarian approach has proven resilient in the aftermath of multiple market storms. His flagship $2.5 billion Ariel Fund was launched in 1986, making it the longest-running fund in Morningstar's mid-cap value category. Since inception, it has posted a 10.5% average annual return, slightly better than both the Russell 2500 Value Index and the S&P 500. But those figures don't do justice to his firm's penchant for stellar performance as stocks recover from ugly bear markets—like the kind investors endured in 2022.

Ariel Fund faced its first test on October 19, 1987, the crash known as Black Monday. The then-29-year-old Rogers frantically called clients and brokers while meeting with his wedding planner. His message: Stocks were suddenly cheap, and investors should buy more. Ariel outperformed with double-digit gains in 1987.

Coming out of the dot-com bust in 2000, the Ariel Fund was up big again, returning 29% that year and 14% in 2001. During the 2008 financial crisis, Rogers' bets on stocks like real estate investment firm CBRE Group and newspaper publisher Gannett caused the fund to suffer a 48% loss—before fueling a 63% gain in 2009.

Last year was another rough one for the Ariel Fund: It fell 19%, compared with a 13% drop for its benchmark Russell 2500 Value Index, largely because it has few energy stocks (which were winners in 2022) and is more heavily weighted toward sectors like media and entertainment, which underperformed. It's a hazard that comes with Rogers' high-conviction and high-concentration investing style—39% of the fund is invested in his top 10 holdings.

"This storm is the worst since '08 and '09. There are so many extraordinary bargains," says Rogers, who got hooked on investing at age 12, when his father started giving him stock for his birthday and Christmas. His affinity for buying unloved equities was further nurtured at Princeton, where economist Burton Malkiel, author of the investment classic *A Random Walk Down Wall Street,* became a mentor.

Rogers' favorite pick these days is Ariel's largest holding, **Madison Square Garden Entertainment**, now trading at a price-to-book ratio of only 0.89. He cites the staying power of its iconic venues like the Garden itself and Radio City Music Hall and gets excited talking about the MSG Sphere, a $2.2 billion entertainment venue set to open in Las Vegas later this year. Plus, he thinks Wall Street undervalues MSG Network, its regional cable network that broadcasts New York Knicks and Rangers games. "Someday, the Knicks are going to win again," says the former Princeton basketball team captain who once bested Michael Jordan in a one-on-one game.

Another Rogers holding is **Paramount Global**. The CBS parent still enjoys high viewership for its live sports broadcasts and *60 Minutes,* and its Paramount Plus service is the streaming home for last year's hit movie *Top Gun: Maverick* and this year's upcoming *Mission: Impossible*. "Sumner Redstone always talked about the fact that content is king, and his daughter Shari believes in the exact same thing," Rogers says. He adds that investors are so focused on the streaming wars, they're underestimating the worldwide reach of Paramount and the value of its brands, which include BET Networks and Showtime. "They're going to figure out a way to monetize this great content."

Outside of media and entertainment, Rogers favors financial-services stocks like investment bank **Lazard**, which Ariel has owned since 2009, and private equity firm **The Carlyle Group**. He likes the consistent fees generated by private equity—**KKR** was a big winner for Ariel before it got too large for its small- and mid-cap funds and he cashed out.

A contrarian sector Rogers is betting will surprise to the upside in the next few years is housing. Ariel has a position in flooring company **Mohawk Industries** and recently repurchased shares of **Generac**, which manufactures power generators. Generac was a standout performer during the pandemic, and Ariel made a fourfold profit on it between February 2019 and December 2020. Now, with Generac down 80% from its October 2021 peak, Rogers thinks it's ripe for a rebound, with concerns about climate change and power outages caused by hurricanes and wildfires spurring customers to buy its generators. *—H.T. and M.A.*

group (Hobson owns 5.5%) headed by billionaire Walmart heir Rob Walton.

Former Meta COO Sheryl Sandberg and Hobson bonded when both served on Starbucks' board. Hobson was there for her, Sandberg says, when her husband died suddenly from a heart condition in 2015. Tennis great Serena Williams met Hobson through a mutual friend, Grammy-winning singer Alicia Keys. "We totally hit it off. I admired what she was talking about," Williams says. "Now, it's so funny. I don't remember anything she said—I just remember being totally enamored by how authoritative she was. For me, it's always so exciting to see someone like her, in that position, to be so confident to have that aplomb when she walks into a room."

NO relationship has been more important to Hobson than her apprenticeship-turned-partnership with Ariel founder John W. Rogers Jr. The 64-year-old Rogers grew up in a different world: His father was a Tuskegee Airman and a judge. His mother was the first Black woman to graduate from the University of Chicago Law School and the granddaughter of one of the architects of Greenwood, the prosperous Black community in Tulsa destroyed by a white riot in 1921. Rogers captained the Princeton basketball team when Craig Robinson, Michelle Obama's brother, was a freshman on it. He later became close to the Obamas, chairing the president-elect's first inauguration committee and giving him Ariel's offices to work from after his victory.

When Hobson came home from Princeton for Christmas break her sophomore year, Rogers invited her to meet his mother, Jewel Lafontant, at her Water Tower Place apartment. "I was in this beautiful apartment, and it just seemed so normal to them, and they were Black, which I had not ever seen before," Hobson says. "The bar got reset in that moment."

While interning at Ariel the following summer, Hobson didn't hide her ambition. On Saturday mornings, Rogers would go to a McDonald's downtown—on Wabash Avenue under the train tracks, Hobson remembers—order two biscuits with butter and a large Diet Coke and sit there reading a stack of newspapers. Hobson would show up with the same stack of papers and read them in the same order—just so she'd be prepared in case he commented on what he was reading.

"She was always eager to jump in the car wherever I was going," Rogers says. He helped her get an internship with T. Rowe Price the next summer, and she interviewed with big Wall Street firms for a job after graduating from Princeton in 1991. But she joined tiny Ariel instead. Rather than being a small cog in a huge machine, she wanted to start her career in the room where decisions were made.

Rogers manages Ariel's stock picking and investment strategies; Hobson oversees everything else. She became co-CEO in 2019, the same year she bought 14% of Rogers' ownership stake—making her the largest shareholder in Ariel, with 39.5%.

In its 40 years, Ariel has gone through some rough patches—the most harrowing during the 2008 global financial crisis, when the Ariel Fund, its largest, fell 48% and investors fled. The firm's assets collapsed from $21 billion in 2004 to just $3.3 billion in March 2009, and it was forced to lay off 18 of its 100 employees. Hobson and Rogers visited their friend and mentor, billionaire investor Mario Gabelli, for advice. "Keep your seat belt fastened. Don't sell the business," Gabelli recalls telling them. "Don't look for an equity partner. Keep it yourself and go full speed ahead." They sent Gabelli a thank-you note, and after the Ariel Fund returned 63% in 2009, crushing its competition, he sent that note back to them in a frame with "I told you so" scrawled in big letters on top.

PROJECT

Black made its first investment last year, acquiring 52.5% of Utah-based Sorenson Communications from other private equity investors at an enterprise value of $1.3 billion. The two-decade-old company, with $837 million in sales in the year ended in September 2021, is the leader in services for the deaf and hard of hearing—providing everything from phone call captioning to sign-language interpreters. Sorenson's new CEO is Jorge Rodriguez, a 53-year-old telecom veteran, who previously ran various subsidiaries for Mexican billionaire Carlos Slim's América Móvil corporation.

In less than 12 months the company has gone from one person of color to 13 across its C-suite and boardroom. Sorenson is adding Spanish-language services and has agreed to acquire 70% of CQ Fluency, a minority-owned business with annual revenue of $45 million, that provides translation services to health insurers including Cigna, Aetna and UnitedHealth Group.

Over the next three years, Project Black plans to similarly buy, minoritize and expand companies in six to 10 other areas where it sees room for growth, based on its conversations with larger firms. It's looking at financial and professional services, health care, technology, manufacturing and logistics. "We don't want to be the provider of janitorial services," emphasizes Ariel Alternatives CEO Leslie Brun. "We want to be in the mainstream of the economy and providing value-added services."

Hobson and Brun aren't just working their own C-suite contacts. Some of those original Sunday Zoom participants are now advisors—people such as William M. Lewis, an Apollo partner who was chairman of investment banking at Lazard for 17 years ending in 2021, and James Bell, the former Boeing CFO whose board memberships include Apple. Naturally, Rogers, who sits on the boards of McDonald's, Nike and the New York Times, is also an advisor.

Hobson, Brun and their backers throw around huge numbers about what Project Black and similar efforts can accomplish. Over the next decade, they forecast, their portfolio companies will generate an additional $8 billion to $10 billion in annual revenue while creating 100,000 jobs for underrepresented people. But that's just the start. Some big corporations are talking about boosting purchases from minority-run suppliers from the current 2% to 10% or even 15%. That could translate to a trillion-dollar opportunity. The thesis, Steve Ballmer says, is that "there's an untapped market" that "will not only benefit the community but will generate great returns for us as an investor." Brun says he'll consider Project Black a success if it spawns copycat investment funds.

Beyond the numbers, this is partly a networking play designed to match capital and people—which is, in essence, one of Hobson's superpowers. Already, she says, "we've had people come to us and say 'If you were to buy a business one day, maybe I could run it.'" She contrasts that with what she has long heard from big business. "So many times, especially in corporate America, they say they can't identify the [minority] talent," Hobson says. "We know them as friends. We know them up and down the food chain in corporate America. We know them as entrepreneurs. We know them as business leaders." F

HOBSON "IS AS COMFORTABLE WITH A PART-TIME BARISTA AS SHE IS WITH ANY HIGH-PROFILE PERSON," SAYS STARBUCKS' HOWARD SCHULTZ.

BLACK HISTORY MONTH

CELEBRATING BLACK ACHIEVEMENT

By Carolyn M. Brown

Black History is both aspirational and inspirational. But for far too long, Black achievement, individually and collectively, has not been a part of the American narrative. As some states push to remove Black History from schools, there is a call by Black leaders to remain vigilant by spotlighting and celebrating the achievements Black Americans have accomplished in this country despite a history of systemic racism and oppression. From the corridors of corporate America to the business landscape of main street America, this special section honors the struggle of yesteryear while giving visibility to organizations, corporations and individuals who are a part of momentous change today.

Hail To The Black Chiefs

The New Year ushered in a historic moment with the announcement that Christopher C. Womack would assume the helm of Atlanta-based Southern Company, one of the largest energy providers in the U.S., effective in March 2023. This marks a record high of nine Black chief executives at the helm of a major U.S. corporation. In 2022, CEO Robert Reffkin and his multibillion-dollar real estate firm, Compass, debuted on the Fortune 500 list, as did Frank Clyburn, CEO at International Flavors & Fragrances Inc., and Craig Arnold, Chairman and CEO of Eaton. They joined David Rawlinson II, President and CEO of Qurate Retail, Inc; René F. Jones, CEO of M&T Bank; Marvin R. Ellison, Chairman, President and CEO at Lowe's; Thasunda Brown Duckett, TIAA's President and CEO; and Rosalind (Roz) G. Brewer, CEO of Walgreens Boots Alliance and the highest-ranking Black CEO on the Fortune 500.

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Access
“means going from
underserved to unstoppable”

Michael C. Hyter
President and CEO, The ELC

Black executives still hold only 3.2% of senior leadership roles at major companies.

Despite such positive news, Black executives still hold only 3.2% of senior leadership roles at major companies, reports Coqual (formerly the Center for Talent Innovation). If the makeup of CEOs at the largest U.S. public companies was reflective of the U.S. population, there would be more than 67 Black CEOs, or 13.5%, compared with 1.6% on the Fortune 500, notes **Michael C. Hyter**, President and CEO of The Executive Leadership Council (ELC). In the history of the Fortune 500, or the last 68 years, out of over 1,800 people to serve at this level, only 24 have been Black, of whom only three have been women.

It was in 1987 that Clifton R. Wharton Jr. became the first Black CEO after taking the reins of Teachers Insurance and Annuity Association and the College Retirement Equities Fund (TIAA-CREF). Wharton broke the color barrier at nearly every step along his path, including his appointment as president of Michigan State University (MSU) in 1969, making him the first Black president to head a major university. He made history in 1982 when he was named Chairman of the Rockefeller Foundation prior to stepping into the CEO role at TIAA-CREF, where he remained until 1993.

Hyter attended MSU when Wharton was president. "I remember meeting him and benefiting from the greatness of his leadership as a student before he transitioned to bigger and better things corporately," says Hyter. "So, there was always a sense of what I call a warm and fuzzy appreciation when he became the CEO of TIAA-CREF. I also knew Roger Ferguson Jr., who became President and CEO of TIAA in 2008, and TIAA's current President and CEO Thasunda Brown Duckett." When Duckett replaced a retiring Ferguson in 2021, it was a rare transition between two Black CEOs at the same company. "I have an affinity as relates to that whole journey with TIAA," adds Hyter.

For the past 36 years, The ELC has been at the forefront of advocating for Black leadership at the mid-management, C-suite and board levels. "The 19 Black corporate executives who formed The ELC in 1986 were the only ones at that level in their companies," says Hyter. "They wanted to figure out a way to use their relationships to help make the playing field available for more people like them to become vice presidents in their companies." Before The ELC, Hyter served as Chief Diversity Officer for Korn Ferry, the global organizational consulting firm. Throughout his career he was a trusted advisor to senior executives, CEOs and board directors at Fortune 1000 companies across multiple industries. Hyter attributes his leadership success to a mindset that "I need to be really good at developing relational and influential skills versus just being technically really good."

Today, The ELC is a preeminent membership organization comprised of more than 800 current and former Black CEOs, senior executives and board directors representing the top 1000/Global 500 companies and entrepreneurs at major firms. A moment etched in history at the 2021 ELC Annual Recognition Gala was when the first Black woman to lead a major corporation, former Xerox CEO Ursula Burns, presented Achievement Awards to Brewer and Duckett. The ELC also recognized Mary Winston, who served as Bed Bath & Beyond's interim chief in 2019.

Just as significant, says Hyter, was "the opportunity to have a conversation with 50 CEOs and their board members and other executives at our CEO GameChanger Conference® about our collective responsibility of helping create an environment that allows Black people to shine and achieve at higher levels than they could imagine.

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Original ELC Members

"The 19 Black corporate executives who formed The ELC in 1986 were the only ones at that level in their companies. They wanted to figure out a way to use their relationships to help make the playing field available for more people like them to become vice presidents in their companies."

—**Michael C. Hyter**

ELC Founders and Associates in Washington, D.C., 1986

Madam C.J. Walker

From Self-Made Millionaire To Billionaire Black Businesswoman

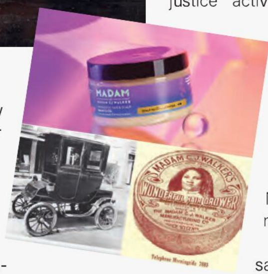
Madam C.J. Walker is credited with being the first Black female self-made millionaire, having amassed her fortune from her line of homemade haircare products for Black women. While media mogul Oprah Winfrey comes first to mind it was Sheila Johnson, co-founder of BET and presently CEO of Salamander Hotels and Resorts, who was America's first Black female billionaire. The first Black woman to own a company that generated $1 billion in revenue was Janice Bryant Howroyd, founder and CEO of the ActOne Group, a global human resources management firm.

Black women are the fastest-growing segment of entrepreneurs in the U.S. Fueled by the pandemic and the exodus of Black women from corporate America, startups by Black women outpace all other groups.

Black women are the fastest-growing segment of entrepreneurs in the U.S. Fueled by the pandemic and the exodus of Black women from corporate America, startups by Black women outpace all other groups. But reports show these founders face disproportionate financial headwinds. Due to a lack of access to capital, Black women are more likely than other demographic groups to self-fund their businesses. Black female founders receive less than 0.40% of VC funding.

Journalist **A'Lelia Bundles** is Madam Walker's great-great-granddaughter. Her mother, A'Lelia Mae Perry Bundles, was vice president of the Madam C.J. Walker Manufacturing Company. As a young girl, Bundles "knew who Madam Walker was," because she would visit the factory and see the ladies mixing the product by hand. But it was as a student at Columbia University's Graduate School of Journalism in 1975 that "I was encouraged by my advisor, Professor Phyllis Garland, the only Black woman on the faculty, to write my master's paper about Madam Walker," she says.

A'Lelia Bundles



Bundles discovered her great-great-grandmother was an icon, not just because she manufactured a haircare product but because she built a national franchise business based on her invention. "She became so much more than a footnote in history," she says. The women she employed were not just Walker beauticians, but "these women became economically independent as a result of working for her as sales agents and beauty culturists."

Her thesis set her on a journey that led to four books, a Madam Walker Barbie doll, a Netflix series titled *Self-Made* and various national historic landmarks in the works. A new MADAM by Madam C.J. Walker haircare line created by Sundial Brands (a Unilever subsidiary) is sold in Walmart.

Bundles acknowledges her great-great-grandmother also was a social justice activist. "Not only did she become a millionaire who built a mansion, but she used her wealth and influence to make a difference in her community as a philanthropist, a patron of the arts and a supporter of the NAACP's anti-lynching movement."

At her 1917 national sales convention, Madam Walker told her agents in her keynote, "I want you to understand that your first duty is to humanity. I want others to look at us and realize that we care not just about ourselves, but about others."

We're influencing the mindsets of CEOs around being the examples in their respective companies as a result of our work."

Their numbers may be small, but their impact is huge. Black executives and CEOs have changed the annals of corporate America. This includes the first class of chiefs, like former American Express Chairman and CEO **Kenneth Chenault**. Throughout his tenure (from 2001 to 2018), Chenault helped increase American Express's market share, expanding its customer base by offering credit cards and charge cards and adding membership rewards programs. He exercised his leadership skills outside of Amex as a board director at various companies, including being the first Black member to serve on the board for Meta (formerly Facebook).

Chenault is the torchbearer for many Black professionals in senior leadership positions today. **Telisa Yancy** recalls seeing a magazine cover featuring Chenault and then Maytag CEO Lloyd Ward. "The two of them had a profound impact on my thinking about what I could do in corporate America and what is the profile of an African American leader. Even to this day, I quote Ken Chenault all the time," says Yancy, who holds the distinction of being the first woman and person of color to serve as President (a title previously held by current CEO Bill Westrate) of American Family Insurance, which includes American Family Insurance, The General, Homesite, Main Street America Insurance.

Kenneth Chenault
Former Chairman and CEO
American Express

Chenault is the torchbearer for many Black professionals in senior leadership positions today.

Known for creating an evolving customer experience and brand position, Yancy joined American Family in 2009 as a marketing director, steadily rising into such leadership positions as Chief Operating Officer. Earlier in her career, Yancy says her philosophy was "to keep my head down and to work harder and longer than anyone else. Every person of color has probably had a conversation where somebody told you that you have to be better than everybody else, just to be able to have an opportunity to sit at the appropriate table," she explains.

As her career progressed, Yancy understood the importance of building relationships across the company and finding co-conspirators, a word frequently used by American Family's CEO in discussing allyship after the George Floyd murder. He told me, "'What you need, Telisa, is a

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fiserv.

Telisa Yancy
Enterprise President
American Family Insurance

> "Every person of color has probably had a conversation where somebody told you that you have to be better than everybody else, just to be able to have an opportunity to sit at the appropriate table."
>
> **—Telisa Yancy**

co-conspirator because I cannot expect you, as an African American leader in our organization, to bear all the weight of what it takes to make sure that we have representation, great talent and an environment where African American leaders believe that they can thrive.' So, I've gone from head down and get your work done to building allies and co-conspirators who will help me co-create the world that I want to live in," Yancy says. She is lending her expertise as a board director for Deluxe Corp., the check and payment solutions company and is also a member of The ELC.

RISE OF BLACK POWER IN THE BOARDROOM

The first Black board director of any major U.S. corporation was Philadelphia minister and civil rights leader Rev. Dr. Leon H. Sullivan with his appointment to General Motors' Board of Directors in 1971. He used his position within the company to end discrimination and lobbied for GM and other larger corporations to sign the Sullivan principles, which outlined standards of conduct opposing apartheid for companies operating in South Africa.

Prominent Black directors today include Marvin R. Ellison, Chairman, President and CEO of Lowe's, who is a board member at FedEx; former TIAA President and CEO Roger W. Ferguson, who serves on the boards of such companies as Alphabet Inc. (parent company of Google), Corning and International Flavors & Fragrances; and Obama Foundation CEO Valerie Jarrett, who is a board director for Walgreens Boots Alliance, Lyft and Ralph Lauren.

In the aftermath of the murder of George Floyd and newfound corporate commitment to DEI initiatives, a record number of Black women were appointed to boards in 2021. There were 185 Black women board directors in 2022, up 18% from 157 in 2021, according to the latest Black Enterprise (BE) "Power In The Boardroom" report of

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the S&P 500, including the 2022 BE Registry of Corporate Directors. The report reveals 85% of the S&P 500 had Black directors in 2022. There were 474 Black corporate board members (out of 4,466 as of May 2022) at 421 corporations in 2022 versus 425 Black corporate directors at 399 companies in 2021. These statistics show much more needs to be done about Black corporate leadership as change continues to move at a snail's pace.

ELC's Hyter points to the founder of Black Enterprise, the late Earl G. Graves Sr., as someone who was a staunch advocate for Black inclusion in the C-suite and corporate governance as well as doing business with Black-owned companies. He launched his company's flagship magazine in 1970 to chronicle Black entrepreneurs and rising Black corporate executives. During his lifetime, Graves Sr. served as a board member for such companies as American Airlines, Daimler Chrysler, Rohm & Hass and Federated Department Stores (Macy's).

John W. Rogers Jr., founder, Chair, Co-CEO, and Chief Investment Officer of Ariel Investments, one of the oldest Black-led global asset management firms, has spent his career sounding the alarm about board culture. He discussed his lifelong effort to get more people of color into boardrooms and key leadership roles when he joined Wharton School Assistant Management Professor Stephanie Creary for her "Leading Diversity at Work" podcast series. He shared how he advocates for an inclusive corporate governance where minority members are seen, heard and valued for their unique perspectives, and pushes for them to speak up and speak out without fear of making white people uncomfortable. This issue was one of his motives for starting the Black Corporate Directors Conference. His board service includes such major corporations as McDonald's, Nike and The New York Times Company.

85% of the S&P 500 had Black directors in 2022

In the podcast, Rogers also noted how Ariel Investment Co-CEO Mellody Hobson is not one to shy away from using her voice in the boardroom. A DEI champion and change agent, Hobson is a board director for JPMorgan Chase and serves as Starbuck's board chair. She joins the only other Black woman to claim such a distinction, Denny's board chair and retired Nine West Group President Brenda Lauderback. In 2022, there were just 14 Black American board chairs and lead directors.

During a conversation with Hyter for the "ELC at 35" special advertising section in Forbes, Lauderback urged Black directors to lead committees and use their influence to shape corporate board culture. She acknowledged "it takes courage to speak up" but added that "you have to be an active contributor in your role as a board member because, otherwise, you're just taking up a seat."

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CITI: Helping Black-Owned Businesses Succeed

Aurora James
Founder of Brother Vellies and Fifteen Percent Pledge

Black people make up nearly 15% of the U.S. population. Yet, Black-owned brands have far from that level of representation on the shelves of most retailers. That's why fashion designer Aurora James founded the Fifteen Percent Pledge and has pushed major retailers to dedicate 15% of their shelf space to Black-owned brands. James—who founded the sustainable lifestyle and accessories line Brother Vellies—continues to advocate on behalf of Black entrepreneurs who have limited access to capital and face structural barriers in getting their products into major retailers.

The Fifteen Percent Pledge is a call to action for major retailers and corporations to create sustainable and supportive ecosystems for Black-owned businesses to succeed. The Pledge works with companies to comprehensively reevaluate their organizational structures, ways of working, funding, and resourcing to help grow our economy and increase equity for Black businesses.

When calls for racial justice were echoing across the country after the death of George Floyd, James recalls people asking her, "How can I help?" She then posted her idea for the Fifteen Percent Pledge on Instagram, tagged major retailers, and the organization was born.

Over the 2022 holiday season, Citi supported the launch of the Pledge's first ever Gifteen Holiday Shop, which featured a holiday store in Soho, NYC and a curated online gift guide, encouraging shoppers to commit 15% of their holiday spending to Black-owned brands.

Citi's support for the Pledge aligns with its Action for Racial Equity, a set of strategic initiatives to help close the racial wealth gap and increase economic mobility in the U.S.

To learn more about Fifteen Percent Pledge, visit www.15percentpledge.org

citi | fifteen percent pledge

A LEGACY OF BLACK ENTREPRENEURSHIP

America has a long and rich history of Black entrepreneurs shaping the nation's business landscape. Black businesses originated well before slavery was abolished in the United States. But emancipation and the Reconstruction era after the Civil War saw a sharp rise in the number of Black-owned businesses. Jim Crow laws gave rise to insulated affluent Black communities separate from whites, like Tulsa, Oklahoma's "Black Wall Street." This led to a boom in entrepreneurship from 1900 to 1930, before the Great Depression gave way to massive decline.

A Black family business that has stood the test of time for more than 117 years is McKissack & McKissack. The nation's oldest minority-owned architectural, engineering and construction firm has roots that stretch before the Civil War, when a slave named Moses McKissack learned the building trade from his overseer. It was his grandson, Moses III, who launched the first McKissack & McKissack enterprise in Nashville in 1905. Then in 1990, Deryl McKissack Daniel took over the family business as sole owner. She was the fifth generation of her family to carry on the building tradition.

As president and CEO of the company, headquartered in New York, McKissack has been a leader in the planning, design, and construction of more than 6,000 projects and managing over $15 billion. Prominent projects include the LaGuardia Airport Central Terminal Building in New York, the National Museum of African American History and Culture in D.C., and Lincoln Financial Field, home of the Philadelphia Eagles. The Howard University graduate told the *Harlem Times* in an interview. "I feel blessed to have a legacy of five generations and to be standing on the shoulders of my forefathers, who all overcame tremendous obstacles to keep our business going through some of the most difficult times of Black America."

America's top Black businesses are demonstrating economic impact by producing more than $25 billion in revenues and employing more than 70,000 workers. David Steward is the founder and Chairman of IT provider World Wide Technology (WWT), one of the largest Black-owned businesses in America. Started in 1990 with only a few employees in a small office in St. Louis, Missouri, WWT now operates out of 4 million square feet across 20 facilities worldwide, employs over 9,000 people globally and generates more than $14.5 billion annually in revenue. Customers include Citi, Verizon and the federal government. Steward is paying it forward and investing in his community which includes supporting diversifying the STEM workforce pipeline and committing $500,000 year over year to the National Minority Supplier Development Council to advance economic equity.

(Main story continued on page 18)

McKissack's prominent projects include the **National Museum of African American History and Culture.**

HBCUs

Investing In HBCUs And The Next Generation Of Black Leaders

Robert F. Smith at Morehouse commencement

Billionaire **Robert F. Smith** made headlines during a commencement speech when he vowed to wipe out the student debt of the entire 2019 graduating class of Morehouse College. His $34 million donation paid off the debt of about 400 Morehouse graduates, including the educational debt incurred by their families. Smith is the founder, Chairman and CEO of Vista Equity Partners, a private equity firm with $96 billion in assets that focuses on investing in software companies. He is also the wealthiest Black man in America with a net worth of $8 billion, according to Forbes data as of January 2023.

Smith followed up his magnanimous offer by launching the Student Freedom Initiative, a nonprofit organization, to ease the disproportionate burden of student loan debt on Black students at historically Black colleges and universities (HBCUs). The initiative is currently operating with a $50 million grant from the Ford II Foundation, a charitable organization of which Smith is Founding Director and President, a $50 million donation from Smith himself and generous contributions from many others. The overall objective is to liberate students so that they have better career options and can make better career choices.

Billionaire Robert F. Smith made headlines during a commencement speech when he vowed to wipe out the student debt of the entire 2019 graduating class of Morehouse College.

Unfair levels of student debt have Black students playing catch-up from the day they start their careers. "It is one of the downsides of the cost of higher education," says Dr. Nadrea Njoku, Director of the Frederick D. Patterson Research Institute at the United Negro College Fund (UNCF). "So, if you make $500,000 as a neurosurgeon, that could be disrupted if you also owe $500,000 in student loans," she explains. UNCF awards more than 7,000 scholarships worth about $83 million annually

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A Conversation with Susan Reid, Global Head of Talent, Morgan Stanley

Susan Reid
Managing Director
and member of the Firm's
Management Committee

In her role as Global Head of Talent she oversees Morgan Stanley's Recruiting, Talent Development and Diversity, Equity and Inclusion efforts.

You recently stepped into an expanded role as Global Head of Talent. What opportunities does this present?
Our talent is critical to the success of the Firm. We are committed to attracting the best talent and creating an organization where everyone can thrive. To ensure we continue to do this, we are modernizing our talent function, bringing together our recruiting, development and diversity efforts to enable us to better deliver the tools and resources employees need throughout their entire career journey. We have made investments to support internal mobility, and to enhance the employee experience through a focus on health and wellness. We are committed to creating a meaningful career journey for everyone at Morgan Stanley.

Morgan Stanley launched the Institute for Inclusion (IFI) in 2020, furthering its broad commitments to help drive racial equity. What is the goal of the IFI?
The IFI helps to ensure that DEI is woven into the full ecosystem of Morgan Stanley. Together with input from our external Advisory Board, we are deepening our investments to create a sustainable impact. This includes driving workforce diversity, supporting philanthropic efforts that promote gender and racial equity, and investing to advance economic outcomes for underserved communities through our products, services and business practices.

Is there an effort from the IFI that you're particularly proud of?
The IFI has delivered several marquee initiatives since its launch, contributing to our long-standing DEI efforts such as the Richard B. Fisher Scholarship, which is celebrating its 30th anniversary this year. Two recent efforts include:

- The Equity in Education and Career Consortium, which supports first generation and low-income students in achieving stronger career and financial outcomes, launched in partnership with iMentor, Hispanic Federation, A Better Change, ANY, CUNY ASAP, College Possible, Braven, and SEO.
- And the Morgan Stanley HBCU Scholars Program in partnership with Morehouse College, Spelman College, and Howard University. Currently at 30 students, the program ads a new cohort each year and will scale to 60 students, providing full scholarships and career readiness support.

These are a few examples of our continuing work to build and to broaden our efforts to contribute to sustainable equitable outcomes.


We believe everyone deserves a shot at success. It's why we support First Tee, an organization empowering kids through golf.
Our investment brings the game's old school lessons of persistence and focus to more children, matching them with diverse coaches who guide them to their full potential.
Because when kids work with leaders who look like them, a world of opportunity opens.
morganstanley.com/whyus
OLD SCHOOL GRIT
NEW WORLD IDEAS
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and has raised more than $5 billion since its 1944 inception. UNCF recently received $190 million from Fidelity Investments, its largest corporate gift to date.

HBCUs have been at the center of the American story for over 180 years—socially and economically.

HBCUs have been at the center of the American story for over 180 years—socially and economically. Today, there are 101 accredited HBCUs, which represent only 3% of higher education institutions in the country. HBCU alumni continue to punch above their weight, notes Njoku, referring to research that reveals HBCUs serve more economically disenfranchised students than most U.S. institutions but also are better vehicles for social mobility and fuel the Black middle class.

"A key component when we think about how we build the next generation of leaders and support the career development of Black talent is HBCUs," says Byna Elliott, Global Head of Advancing Black Pathways at JPMorgan Chase. She points to the financial services firm's 5-year, $30 million commitment to the financial and career success of students at HBCUs.

Elliott says the firm's relationship with HBCUs is a vital step toward breaking down barriers and creating more access to economic opportunity. "This commitment offers HBCUs the flexibility they need to meet the unique needs of their students and provide the next generation access to tools and resources to get ahead."

(Main story continued on page 18)

Notable Black Americans (past and present) who have attended HBCUs

- **Rosalind G. Brewer**, CEO, Walgreens Boots Alliance (Spelman College, current chair of the board of trustees)
- **Kamala Harris**, U.S. Vice President (Howard University)
- **Oprah Winfrey**, Founder, Chairman and CEO, Harpo Inc. (Tennessee State University)
- **Dr. Martin Luther King Jr.** (Morehouse College)
- **Thurgood Marshall**, U.S. Supreme Court Justice (Lincoln University, Howard University)
- **Aisha "Pinky" Cole**, Founder and CEO of Slutty Vegan burger chain (Clark Atlanta University)
- **Melissa Butler**, Founder and CEO of the Lip Bar, a vegan lipstick sold at Target (Florida A&M University)

THE POWER TO inspire change

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BANK OF AMERICA

(Continued from page 12)

Entrepreneurship plays an important role in building wealth in families, communities and economies, but the opportunity to start and grow a business is not equal for white and Black Americans, according to findings from the U.S. Chamber of Commerce. These disparities can be explained by persistent gaps in access to financial capital, says Rick C. Wade, Senior Vice President of Strategic Alliances and Outreach. Given that 70.6% of Black entrepreneurs rely on personal and family savings for financing, lower family wealth for Black families overall drives more of a divide in access to capital.

Closing racial divides in entrepreneurship would provide a significant infusion of jobs and economic growth. "What we have been working on as the world's largest business organization is using our power to convene policymakers, whether it's in Washington or it's through our state and local Chambers of Commerce, around real conversations and actions to address policies that will help to unleash more capital," adds Wade. "Black businesses are underbanked. So, "we're also pushing an agenda (in the private sector) that lending institutions do more to engage Black businesses across America."

Nicole Elam
President and CEO
National Bankers Association

"Even if they have the same credit profile, Black small businesses are 2.4 times more likely to be denied credit than their white small business counterparts," says **Nicole Elam**, President and CEO of the National Bankers Association (NBA). "Data points show that Black banks are still needed today because they are the ones that are saying yes when others are saying no." While minority banks represent only 3% of the entire banking sector, "they are the primary providers of home mortgages and small business loans in communities where minority populations are greater than 77%."

Elam, the youngest CEO in the history of the premier trade association and a voice for minority financial institutions, is driving a focus on minority banks getting better capitalization, partnerships and technology to extend their customer reach. In the past two years there has been an unprecedented influx of capital to minority banks. "We've seen a billion dollars flow into Black banks alone and capital from the federal government, through the Treasury's Emergency Capital Investment Program and the CDFI Fund, but also the private sector as well."

New Orleans' Liberty Bank and Trust grew from $600 million in assets to top $1 billion, making it the largest Black bank in the country by asset size, with locations

(Continued on page 20)

it’s only human to encourage the next generation of ideas
Today’s students go on to become tomorrow’s employees — including ours. At Chevron, we support science, technology, engineering, and math education to help students develop real-world problem-solving and critical-thinking skills. We’re preparing Black students for the opportunities ahead with $13.6 million committed to K-12 education partners, HBCUs, and the United Negro and Thurgood Marshall College Funds. It’s good for the future of our community and our company. Learn more at Chevron.com/racial-equity
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across nine states. In 2021, Citizens Trust Bank celebrated its 100th year of existence. With the goal of helping Black people find financing to open their own shops, Heman Perry and four other Black Atlanta businessmen opened Citizens Trust in 1921 with $500,000 in capital stock. Today, the nation's oldest Black-owned bank has more than $668 million in assets and locations in Georgia and Alabama.

At the peak of Black banking, there were 134 Black banks. Today there are only 19. And a lot of that has been due to lack of capital and lack of investments in Black banks that's led to many of them closing their doors or consolidating, Elam says. The National Bankers Community Alliance, NBA's 501(c)(3) nonprofit affiliate, recently received a $10 million Community Finance Innovation Fund grant from Citi Foundation to help modernize, digitalize and scale minority banks.

Elam started her career as an attorney at Akin Gump Strauss Hauer & Feld, where she gained invaluable insight from civil rights leaders such as Vernon Jordan, the power broker attorney who was a close adviser to President Bill Clinton. "Jordan was really big on making sure that leaders exert influence wherever they go. Great leaders are able to create a ripple effect," she says.

Thasunda Brown Duckett
President and CEO, TIAA

Elam came to the NBA from JPMorgan Chase, where she was Vice President and Government Relations Manager. She was inspired by the leadership of **Thasunda Brown Duckett** who, prior to becoming TIAA's chief was the CEO of Chase Consumer Banking at JPMorgan, where she oversaw $600 billion in deposits, 4,900 branches and 40,000 employees. "Thasunda taught me the importance of leveraging your seat for impact. Leaders are either instrumental in creating real and lasting change, or they're squandering opportunities," she adds.

At the 2021 ELC Virtual Gala, Duckett talked about the power of the collective voice and the value of change agents. "I know there's still a job to be done. When I occasionally get discouraged about still being in rooms where I'm "the only"—I remind myself of the words of the giant we lost, **Congressman John Lewis.** We all know his admonition to get into 'good trouble.' But, for me, it's really his whole quote that I find powerful. He said we should **'not get lost in a sea of despair. Be hopeful, be optimistic. Our struggle is not the struggle of a day, a week, a month or a year—it's the struggle of a lifetime. Never, ever be afraid to make some noise and get in good trouble, necessary trouble.'"** ■

Future Shock

ChatGPT's popularity was unexpected inside the company. "None of us were that enamored by it," says OpenAI's president, Greg Brockman. "None of us were like, 'This is really useful.'"

THE TREND

While the world buzzes about **ChatGPT's** astonishing writing abilities, the next is forming, amid a shift that

BY **ALEX KONRAD**
AND **KENRICK CAI**

THE A.I. ERA BEGINS RIGHT NOW

generation of business tools
could prove as transformative as the internet.

PHOTOGRAPH BY
ETHAN PINE FOR FORBES

IN

an unremarkable conference room inside OpenAI's office, insulated from the mid-January rain pelting San Francisco, company president Greg Brockman surveys the "energy levels" of the team overseeing the company's new artificial intelligence model, ChatGPT. "How are we doing between 'everything's on fire and everyone's burned out' to 'everyone's just back from the holidays and everything's good'? What's the spectrum?" he asks.

"I would say the holidays came at just the right time," replies one lieutenant. That's an understatement. Within five days of ChatGPT's November launch, 1 million users overloaded its servers with trivia questions, poetry prompts and recipe requests. (*Forbes* estimates it's now 5 million–plus.) OpenAI quietly routed some of the load to its training supercomputer, thousands of interconnected graphics processing units (GPUs) custom-built with allies Microsoft and Nvidia, while long-term work on its next models, like the highly anticipated GPT-4, took a back seat.

As the group huddles, ChatGPT's at-capacity servers still turn away users. The previous day, it went down for two hours. Yet amid the fatigue, this roomful of employees, all in their twenties and early thirties, clearly relish their roles in a historic moment. "AI is going to be debated as the hottest topic of 2023. And you know what? That's appropriate," says Bill Gates, the person most responsible for a similar previous paradigm shift—one known as software. "This is every bit as important as the PC, as the internet."

The markets agree. Valued at $29 billion following a reported $10 billion investment commitment from Microsoft, OpenAI—specifically, Brockman, 34, and his boss, CEO Sam Altman, 37—serves as the poster child for something extraordinary. But it's hardly alone. In image generation, Amazon quietly backs Stability AI (recent value: $1 billion), whose brash CEO, Emad Mostaque, 39, aspires to be the Amazon Web Services of the category. Hugging Face ($2 billion) supplies tools for giants like Intel and Meta to build and run competitive models themselves. Below the generative AI providers in this budding tech stack, Scale AI ($7.3 billion) and others provide picks-and-shovels infrastructure; above them, an ecosystem of applications develops, funneling the AI into specialized software that could fundamentally alter jobs for lawyers, salespeople, doctors—pretty much everyone.

Is there hype? Plenty. The reported valuation for OpenAI, aggressively forecasting 2023 revenue of $200 million (compared to expected revenue of about $30 million last year, according to part of a past investor presentation observed by *Forbes*), would imply a forward 145 price-to-sales multiple, compared to a more typical 10x or 20x. (OpenAI declined to comment on its financials except to say that the investment was multiyear and multibillion.) No matter that AI insurgents aren't pure disruptors—Amazon, Google, Microsoft, Nvidia and others already profit by providing the cloud infrastructure underpinning much of the category. Google in particular, with its enormous resources and decade-plus of machine learning research, is the "elephant in the room," says investor Mike Volpi at Index Ventures.

Societal challenges? Those too. There's potential for bias and discrimination in the models, not to mention misuse by bad actors. Legal spats are emerging over the ownership of AI-generated work and the actual data used to teach them. Then there's the ultimate goal that some, such as OpenAI's leaders, envision: a conscious, self-improving "artificial general intelligence" that could reimagine capitalism (Altman's hope)—or threaten humanity (others' fear, including Elon Musk's).

NEW YORK CITY'S PUBLIC SCHOOL SYSTEM BANNED CHATGPT, AND A WHARTON PROFESSOR WHO TESTED THE PROGRAM GAVE IT A "B" ON HIS FINAL EXAM.

But in speaking with more than 60 researchers, investors and entrepreneurs in the category, it's clear that this AI gold rush also has something other recent crazes have lacked: practical, even boring, business substance. The race to embed tools in company workflows, large and small, is already on. Calls to AI-based code snippets, or APIs, soared tenfold in 2022, with more acceleration in December, according to provider RapidAPI. A recent Cowen study of 100-plus enterprise software buyers found that AI has emerged as the top spending priority among emerging technologies. ChatGPT and OpenAI's models are coming to Microsoft's massive-footprint suite of products such as Outlook and Word, with most business software makers poised to follow suit quickly.

A quarter-century after IBM's Deep Blue program defeated chess grandmaster Garry Kasparov, the shift to artificial intelligence is finally here. "It's an exciting time," the press-shy Altman tells *Forbes*, "but my hope is that it's still extremely early."

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This AI tipping point also has roots in London, the headquarters for Mostaque's Stability. In August, hot on the heels of the beta launch of OpenAI's image model, DALL-E, Mostaque released Stable Diffusion, which allows anyone to instantly spin a line of text into a piece of art, or turn a dull selfie into a dramatic self-portrait. Unlike OpenAI's proprietary model, Stability doesn't own Stable Diffusion, which is open-source. But it's become the biggest driving force and profit-maker behind the project so far. On any given day, 10 million people use Stable Diffusion—more than any other model.

Such rapid adoption proved a turning point. Previously, AI had existed in three realms. The first was academic: A seminal paper demonstrating the power of neural networks, a key underpinning of GPT and other large language models (so named because they can scan, translate and generate text) was published more than a decade ago. The second was demonstrative: Deep Blue created an arms race of stunts, with Alphabet's DeepMind unit ultimately creating juggernauts in chess and the ancient board game Go. The third was incremental: apps like Gmail, which works without AI but is better with features such as autocomplete.

What none of these had was the magic of playing with the technology firsthand that made Stability such a breakthrough. Its overnight virality was enough for investors to offer the company a $1 billion valuation and more than $100 million of funding in August, within two weeks of its launch—off virtually no revenue.

Now, generative AI has exploded. Electronic music group the Chainsmokers used Stable Diffusion to render a recent music video, and Mostaque predicts it'll soon be used to generate entire movies. The Dalí Museum in St. Petersburg, Florida, is using DALL-E to help visitors visualize their dreams, and a similar image generation tool from the startup Midjourney sparked outrage online when it was used to create a piece of art that won a top prize at the Colorado State Fair.

"I think this is a Sputnik moment," says Stripe CEO Patrick Collison, Brockman's former boss, who says he's looking forward to AI tools live-translating YouTube videos and grouping them by AI-identified themes.

As Stability proliferated, OpenAI had already decided to shelve ChatGPT to concentrate on domain-focused alternatives, saving the interface for a bigger later release. But by November, it had reversed course. And by January, as New York City's public school system banned ChatGPT on its

CLEM DELANGUE BY LEVON BISS FOR FORBES

computers and a Wharton professor who tested the program gave it a "B" on his final exam, the company offered a test paid version of the tool to some users. "Stable Diffusion threw a bomb into the mix by making things dramatically more accessible," says Sequoia investor Pat Grady, an OpenAI backer. "It really lit a fire under OpenAI and got them to become much more commercially focused."

This, in turn, accelerated the commercial aspirations across the industry. Stability's Mostaque gave his entire staff off during the holidays—he himself mostly slept, interrupted only by GPT-fueled panic calls from headmasters of top U.K. schools—with the idea that 2023 would turn grueling as he tries to go toe to toe with not just OpenAI but the likes of Google and Meta. His message to his team: "You're all going to die in 2023."

AI'S POTENTIAL IMPACT NEEDS TO BE DEBATED NOW: "IT'S LIKE AN INVASIVE SPECIES. WE WILL NEED POLICYMAKING AT THE SPEED OF TECHNOLOGY."

• • •

The world's biggest tech companies have accepted the challenge. At Google, hermetic founders Sergey Brin and Larry Page have reportedly returned to headquarters as part of a "code red" enacted by CEO Sundar Pichai to address ChatGPT and its ilk; at Microsoft, long-retired cofounder Gates tells *Forbes* he now spends about 10% of his time meeting with various teams about their product road maps.

Google *should* have the advantage. In 2017, Google researchers invented the "T" in GPT, publishing a paper on transformers that, by analyzing the context of a word in a sentence, made large language models more practical. One of its authors, Aidan Gomez, remembers deploying the tech first to Google Translate, then to Search, Gmail and Docs. How it's used, however, remains mostly behind the scenes—or in support of advertising products, the bulk of its sales—leaving consumers un-wowed. "I was waiting for the world to start picking this up and building with it, and it wasn't happening," says Gomez, who launched his own OpenAI challenger, Cohere, in 2019. "Nothing was changing." Of the paper's eight authors, six have left Google to start their own companies; another jumped to OpenAI.

Instead, Microsoft seems poised to become the industry leader. In 2019, Brockman and his team realized they couldn't pay for the large-scale computing GPT would need with the money they had been able to raise as a nonprofit, including from the likes of Peter Thiel and Musk. OpenAI spun up a for-profit entity to give employees equity and take on traditional backers, and Altman came onboard full-time. Microsoft CEO Satya Nadella committed $1 billion to OpenAI at the time, and guaranteed a large and growing customer base in his cloud service, Microsoft Azure.

Now, the $10 billion Microsoft investment will translate into ChatGPT

Think Bigger

At his $2 billion startup's January offsite in France, Clem Delangue, Hugging Face's cofounder and CEO, had one directive for his 150 employees: Be more ambitious. "Sometimes when an industry gets bigger, the speed of evolution goes down. Here it's evolving really, really fast. I think there's potential for multiple $100 billion companies."

Teeing Up A Generation

Extraordinary Stories Of Change Championed Through Golf

By Mallory Gafas | Illustrations By Irene Laschi

The golf course is known as a place where power brokers close deals. What if it could also open doors to the next generation of diverse leaders?

That's the idea at the heart of First Tee, a nonprofit youth development organization that has been empowering young minds across the world for more than 25 years. Its unique mission provides educational programs that build character and instill life-enhancing values through the game of golf.

Below, three alumni share stories of how First Tee not only influenced their younger years but also paved the way for their future careers, equipped them with powerful life and leadership skills and shaped their passions.

25 YEARS OF IMPACT

2.2 million
youth reached annually

4,200+
active coaches

10,000+
trained teachers and youth leaders

CREATING A CAREER

J.P. Ray

First Tee Participant Since 2004

"It taught me life skills...taught me how to continue to persevere. That inspired me to graduate from college [and] law school. I'm a first-generation lawyer now."

J.P. Ray was 8 years old when his father first enrolled him in First Tee - Tulsa. It quickly became a passion that continued long after Ray graduated from the youth participant program. In college, he took advantage of several national alumni opportunities—one of which was a First Tee scholarship to attend THE PLAYERS Championship hosted annually by the PwC Executive Forum. It was there that Ray says he was inspired to pursue a law degree.

"To be able to network with different people and hear their experiences, hear how they got into their profession—it just kind of got the ball rolling on, 'Okay, well what do I want to do with my career?'"

Speaking to Forbes just after passing his bar exam, Ray, now 25, says he believes First Tee plays a critical role in removing barriers to entry in golf. "You don't always see people of color on golf courses," he says. "First Tee has done a really good job of making golf more accessible, less expensive—and just providing that opportunity for people to get involved."

EMPOWERING SELF-CONFIDENCE

Taryn Yee

First Tee Participant Since 2002

"I've built a First Tee family. Coaches [and] my friends in First Tee have all been super instrumental in my life—and I still lean on them to this day."

Taryn Yee says she was an introverted child. But when she first joined First Tee - Greater Sacramento at age 10, a more outgoing personality emerged. "Just trusting myself, trusting my golf swing…and interacting with a lot of people as well made me a much more confident person."

Now 30, Yee says the social skills and relationships developed through First Tee have fueled her growth personally as well as professionally—from playing competitive golf in college to earning a bachelor's degree in business to becoming a successful program manager. "As I started getting older…it wasn't just about golf anymore," she says. "It was really the people."

Yee currently volunteers with First Tee chapters in both Sacramento and San Francisco—and she is excited about new opportunities to connect. First Tee's multi-year reinvestment in technology advancements will soon offer alumni and participants fresh ways to interact and engage.

COACHING FORWARD

Brittany Woo

First Tee Participant Since 2004

"It's a lot more about understanding the player...and how we can connect with them on a deeper level than just through a specific golf activity."

Brittany Woo's 8-year-old self would likely be surprised to learn that First Tee would become a lifelong passion. "I was *not* about carrying my bag on the golf course," she remembers of her first season. "Then it evolved into, okay—well First Tee hosts all these events for kids like us, and we get to travel all across the country and meet new people and try different things. That sounds pretty cool!"

Woo continued her participation through high school and then began volunteer coaching in college. She now serves as full-time senior director of programs for First Tee - Greater Richmond. "It's very humbling to see [the kids] grow up as their own person, and the coaches have a piece in that."

Woo believes more mentors can create more relatable role models for First Tee participants, so she is currently helping the organization actively recruit volunteer coaches of all experience levels to serve on and off the golf course. "A diverse group of coaches will help us connect with [our] diverse group of participants," she says.

PIONEERING CHANGE THROUGH GOLF

For over 25 years, First Tee has been building strength of character through golf to empower kids across a lifetime with valuable education, life, leadership and golf opportunities. Visit **www.firsttee.org** to learn more about First Tee's game-changing mission.

deploying across Microsoft's Office software suite. RBC Capital Markets analyst Rishi Jaluria, who covers Microsoft, imagines a near-future "game-changer" world in which workers convert Word documents into elegant PowerPoint presentations at the push of a button.

For years, the big data question for large enterprises has been how to turn hordes of data into revenue-generating insights, says FPV Ventures cofounder Pegah Ebrahimi, the former CIO of Morgan Stanley's investment banking unit. Now, employees ask how they can deploy AI tools to analyze video catalogs, or embed chatbots into their own products. "A lot of them have been doing that exercise in the last couple of months and have come to the conclusion that yes, it's interesting, and there are places we could use it," she says.

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The big debate around this new AI era surrounds yet another abbreviation: "AGI," or artificial general intelligence—a conscious, self-teaching system that could theoretically outgrow human control. Helping to develop such technology safely remains the core mission at OpenAI, its executives say. "The most important question is not going to be how to make technical progress, it's going to be what values are in there," Brockman says. At Stability, Mostaque scoffs at the objective as misguided: "I don't care about AGI. . . . If you want to do AGI, you can go work for OpenAI. If you want to get stuff that goes out to people, you come to us."

OpenAI supporters like billionaire Reid Hoffman, who donated to its nonprofit through his charitable foundation, claim that reaching an AGI would be a bonus, not a requirement for global benefit. Altman admits he's been "reflecting a great deal" on whether we will recognize AGI should it arrive. He currently believes "it's not going to be a crystal-clear moment; it's going to be a much more gradual transition." But researchers warn that the potential impact of AI models needs to be debated now, given that once released, they can't be taken back. "It's like an invasive species," says Aviv Ovadya, a researcher at Harvard's Center for Internet and Society. "We will need policymaking at the speed of technology."

Toil and Trouble

The "dot-AI bubble" is coming, says Stability AI founder and CEO Emad Mostaque. Unlike with past bubbles, though, the business impact is clear. "In boardrooms, what's the number one topic? Generative AI."

EMAD MOSTAQUE BY LEVON BISS FOR FORBES

"EVERY TIME WE'VE GONE TO MICROSOFT TO SAY 'HEY, WE NEED TO DO THIS WEIRD THING THAT YOU'RE PROBABLY GOING TO HATE,' THEY HAVE SAID, 'THAT'S AWESOME.'"

In the nearer term, these models, and the high-flying companies behind them, face pressing questions about the ethics of their creations. OpenAI and other players use third-party vendors to label some of their data and train their models on what's out of bounds, forfeiting some control over their creators. A recent review of hundreds of job descriptions written using ChatGPT by Kieran Snyder, CEO of software maker Textio, found that the more tailored the prompt, the more compelling the AI output—and the more potentially biased. OpenAI's guardrails know to keep out explicitly sexist or racist terms. But discrimination by age, disability or religion slipped through. "It's hard to write editorial rules that filter out the numerous ways people are bigoted," she says.

Copyright laws are another battleground. Microsoft and OpenAI are the

target of a class action lawsuit alleging "piracy" of programmers' code. (Both companies recently filed motions to dismiss the claims and declined further comment.) Stability was recently sued by Getty Images, which claims Stable Diffusion was illegally trained on millions of its proprietary photos. A company spokesperson said it was still reviewing the documents.

Even more dangerous are bad actors who could deliberately use generative AI to disseminate disinformation—say, photorealistic videos of a violent riot that never actually happened. "Trusting information is part of the foundation of democracy," says Fei-Fei Li, the codirector of Stanford's Institute for Human-Centered Artificial Intelligence. "That will be profoundly impacted."

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Who will have to answer such questions depends in part on how the fast-growing AI market takes shape. "In the '90s we had AltaVista, Infoseek and about 10 other companies that were like it, and you could feel in the moment like some or one of any of those were going to the moon," says Benchmark partner Eric Vishria. "Now they're all gone."

Microsoft's investment in OpenAI, which comes with a majority profit-sharing agreement until it has made back its investment, plus a capped share of additional profits, is unprecedented, including its promise for OpenAI to eventually return to nonprofit control. (Altman and Brockman, respectively, call that a "safety override" and "automatic circuit breaker" to keep OpenAI from concentrating power if it gets too big.) Some industry observers more wryly see the deal as a near-acquisition, or at least a rental, that benefits Nadella the most. "Every time we've gone to them to say, 'Hey, we need to do this weird thing that you're probably going to hate,' they've said, 'That's awesome,'" Altman says of the arrangement. (Microsoft declined to discuss the deal's terms.)

There's another under-discussed aspect of this deal: OpenAI could gain access to vast new stores of data from Microsoft's Office suite—crucial as AI models mine the internet's available documents to exhaustion. Google, of course, already has such a treasure trove. Its massive AI divisions have worked with it for years, mostly to protect its own businesses. A bevy of fast-tracked AI releases are now expected for 2023.

ABOVE ALL, STAY OUT OF GOOGLE'S WAY: "THEY'VE GOT MORE GPUs THAN YOU, THEY'VE GOT MORE TALENT THAN YOU, THEY'VE GOT MORE DATA THAN YOU."

At Stability, Mostaque takes great pains to explain his business as focused on the creative industry, more like Disney and Netflix—above all, staying out of Google's way. "They've got more GPUs than you, they've got more talent than you, they've got more data than you," he says. But Mostaque has made his own potential Faustian bargain, with Amazon. A partnership with Stability saw the cloud leader provide more than 4,000 Nvidia AI chips for Stability to assemble one of the world's largest supercomputers. Mostaque says that a year ago, Stability had just 32 such GPUs.

"They cut us an incredibly attractive deal," he says. For good reason: The synergy provides an obvious cash cow from cloud computing run on Amazon Web Services and could generate content for its Studios entertainment arm. But beyond that, Amazon's play is an open question.

Don't forget Apple and Facebook parent Meta, which have large AI units, too. Apple recently released an update that integrates Stable Diffusion directly into its latest operating systems. At Meta, chief AI scientist Yann LeCun griped to reporters, and over Twitter, about ChatGPT buzz. Then there are the many startups looking to build all around, and against, OpenAI, Stability and their kind. Clem Delangue, the 34-year-old CEO of Hugging Face, which hosts the Stable Diffusion open-source model, envisions a Rebel Alliance of sorts, a diverse AI ecosystem less dependent on any Big Tech player. Otherwise, Delangue argues, the costs of such models lack transparency and will rely on Big Tech subsidies to remain viable. "It's cloud money laundering," he says.

Existing startup players like Jasper, an AI-based copywriter that built tools on top of GPT and generated an estimated $75 million in revenue last year, are scrambling to keep above the wave. The company has already refocused away from individual users, some of whom were paying $100 or more a month for features now covered roughly by ChatGPT, with OpenAI's own planned first-party applications yet to arrive. "This stuff gets broken through so quickly, it's like nobody has an edge," says CEO Dave Rogenmoser.

That applies to OpenAI, too, the biggest prize and the biggest target in the bunch. In January, a startup founded by former OpenAI researchers called Anthropic (backed most recently by Sam Bankman-Fried of bankrupt firm FTX), released its own chatbot called Claude. The bot holds its own against ChatGPT in many respects, despite having been developed at a fraction of the cost, says Scale AI CEO Alexandr Wang, an infrastructure software provider to both. "It [raises] the question: What are the moats? I don't think there's a clear answer."

At OpenAI, Brockman points to a clause in the company's nonprofit charter that promises, should another company be close to reaching artificial general intelligence, to shut down OpenAI's work and merge it into the competing project. "I haven't seen anyone else adopt that," he says. Altman, too, is unperturbed by horse-race details. Can ChatGPT beat Google search? "People are totally missing the opportunity if you're focused on yesterday's news," he muses. "I'm much more interested in thinking about what comes way beyond." Ⓕ

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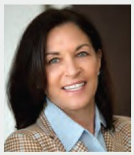

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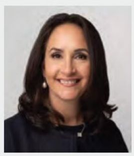

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THE AMERICAN DREAM TODAY

How one Association is protecting and advancing the American Dream in the 21st Century

Engraved on the pedestal of the Statue of Liberty, standing as a beautiful beacon of freedom and prosperity in the New York Harbor, is the elegant and powerful phrase, "Give me your tired, your poor, your huddled masses yearning to breathe free..."

Those words and that awe-inspiring symbol were seen by the millions of people who flocked to the promise of the United States of America. In most cases they arrived exhausted, with little to call their own, but with dreams of what life could be. That near-sacred concept is what continues to set the United States apart. This "Dream" is a national ethos, a profound expression that encapsulates the spirit of a proud people and a rich, welcoming culture. It is not just a rhetorical device, but an actionable approach that if pursued with integrity and purpose can be a life-altering ideal from which to gain inspiration and vision to achieve success in all its varying forms.

The concept that emerged from this experience was "The American Dream" and it first appeared in the 1931 best-selling book, "Epic of America." Its author, James Truslow Adams, described it as "that dream of a land in which life should be better and richer and fuller for everyone, with opportunity for each according to ability or achievement." Following the book's publication, America was an uncertain nation experiencing seismic shifts. In the first 50 years of the 20th century, Americans survived two World Wars, the Great Depression, and a revolution in technology. There were new careers, access to higher education through the GI Bill, the beginning of a baby boom, and more. Yet, despite the emergent opportunities in post-World War II life, questions abounded as to whether the American Dream still existed. This cynicism bred apathy among the nation's youth. Was the American Dream real? Or was it a concept of the 19th century... one that would only live on in the stories written by Horatio Alger, Jr.?

Believing that this Dream still burned brightly, Dr. Kenneth Beebe, with support from Dr. Norman Vincent Peale, stepped forward to help the nation, especially its youth, answer these questions by establishing the Horatio Alger Association of Distinguished Americans in 1947. The mission of the organization was simple: dispel a growing belief that the American Dream was no longer attainable. To do this, the Association began a tradition of honoring individuals whose life stories reflected the dream it so deeply revered: unyielding perseverance in the face of adversity; incomparable success despite major obstacles; and integrity and hard work above all else. These role model citizens came from humble beginnings, conquered overwhelming adversity, and ultimately reached the pinnacle of success in their chosen field. Their life stories and achievements helped to vividly demonstrate that the American Dream was still very much alive.

Today, 76 years after its inception, the Association remains true to its mission — to preserve and defend the American Dream for future generations. It is a thriving educational non-profit with 274 living Members rooted in the core values that define the Amercan Dream:

freedom, mutual respect and equality of opportunity.

The Association honors its Members' lifetime of achievements and their commitment to philanthropy, while also paying their successes forward by investing in a new generation of Scholars pursuing their own American Dream. Horatio Alger Members support promising young people with the resources and confidence needed to overcome their own adversity – just as they did – and pursue their dreams through higher education.

Since 1984, when the Association launched its national scholarship program, it has supported 35,000 students and provided over $245 million in need-based scholarships. More than 50% of Horatio Alger Scholars are first-generation college students and the average family income of Scholars is just $25,000. Each year, an estimated $20 million is raised and distributed to a diverse cohort of 2,000 highly promising Scholars in the United States and Canada.

What makes this work so remarkable is that every dollar provided in scholarships is privately funded through the generosity of the Association's Members (and their Life Partners and families) and Friends of Distinction. In recognition of its high-impact and fiscally responsible programs, and thanks to the leadership of its Board of Directors, the Association has been awarded Charity Navigator's highest rating for six consecutive years.

Such impact doesn't just happen. It takes thoughtful planning and true stewardship inspired, sustained, and expanded upon by a membership that is differentiated by how it puts its values into action:

Facing adversity – and overcoming it.
Working hard – and achieving much.
Following the path forward – and doing so with integrity.
Identifying those that need help – and giving back tirelessly.
Seeing where opportunity is limited – and opening possibilities for deserving new generations.

Members of the Horatio Alger Association of Distinguished Americans are the select few who have been honored with the Horatio Alger Award. They are dedicated civic, corporate, and cultural leaders whose individual initiative and commitment to excellence have led to remarkable achievements that reflect honesty, hard work, self-reliance, and perseverance.

Horatio Alger Members are part of a distinguished group who have experienced a wide spectrum of what life offers. Like the characters in stories by Horatio Alger, Jr., Members traditionally have started life in "humble" or economically challenging circumstances. Despite early adversity, or perhaps because of it, these men and women have worked diligently to achieve success and fulfill their dreams.

And Association Members have made outstanding contributions in the fields of science, medicine, business, entertainment, athletics, law and jurisprudence, religion, education, and the arts. Through their personal and professional experiences, they prove that the American Dream continues to be attainable.

To be nominated to membership is a recognition of lifetime achievement, and to accept this award is a lifetime commitment to the Association's mission.

Since 1947, only 773 men and women have been chosen for this honor, and their stories and journeys demonstrate the ongoing relevance of the American Dream. The ties that bind these remarkable individuals together across 76 years are:

- Triumph over adversity. The Association defines adversity as any significant economic, emotional, physical, or familial barrier to success that requires exemplary levels of dedication, hard work, and courage to overcome.
- Achievement of outstanding professional accomplishments through individual initiative, self-reliance, hard work, commitment to excellence, enthusiasm, integrity, and perseverance.
- Proven philanthropic record and a demonstrated commitment to assisting others in need.
- Commitment to the free-enterprise system.

2023 Horatio Alger Award Recipients

In 2023, the Association welcomes 13 New Members, all of whom recognize that there is no greater privilege or responsibility than ensuring the American Dream for future generations. We salute these men and women as the Association prepares for their induction during the 76th Annual Horatio Alger Awards Induction Ceremonies in Washington, DC.

Donald T. (Boysie) Bollinger

Retired Chairman and CEO

BOLLINGER ENTERPRISES, LLC

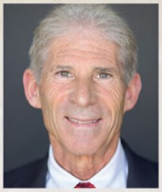
"I'm proud to be recognized for my professional accomplishments, but even more honored to become a Horatio Alger Member. I'm passionate about giving back to the next generation of great leaders and I look forward to sharing my story of how doors can be opened through higher education."

John F. Crowley

Executive Chairman and Founding CEO

AMICUS THERAPEUTICS, INC.

"I have seen firsthand what people are capable of when they're working toward a common goal with passion and tenacity. I am pleased to join the many Members who are helping lift up future generations of leaders."

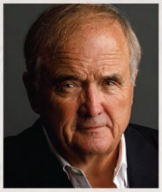


James B. Freedman

Managing Director and Chairman

INTREPID INVESTMENT BANKERS

"Supporting young entrepreneurs and leaders to realize their potential brings me immense personal fulfillment. I quickly connected to the Horatio Alger Association's mission to help deserving students reach their dreams through higher education, and I look forward to any impact my story and mentorship can provide to its Scholars."



David Hoffmann

Founder and Chairman

HOFFMANN FAMILY OF COMPANIES

"Philanthropy is central to who I am, and I'm particularly drawn to organizations like the Horatio Alger Association that support deserving young people. An athletic scholarship allowed me to pursue a college degree, so I know firsthand how life-changing scholarships can be. I am proud to become a part of this honorable community."

Louis L. Holtz

Legendary College Football Coach and Analyst

"I have been fortunate to have a fulfilling career doing what I love, instilling qualities in young athletes that translate to both the game and life. It is an honor to be recognized for the difference I have made in the lives of others, while also being granted an opportunity to continue my work with the next generation."

Y. Michele Kang

Owner

WASHINGTON SPIRIT

Founder and CEO

COGNOSANTE

"I was able to turn my passion for helping veterans and others who face adversities into a fulfilling career, and I look forward to teaching Scholars how they, too, can stay true to their dreams and achieve success."

Keith T. Koenig

Co-Founder and Chairman

CITY FURNITURE

"Despite the challenges I've faced, I have always recognized the importance of community involvement and service to others. I can't think of a more worthy cause than supporting young people who wish to pursue higher education."

Brian Lamb

Managing Director and Northeast Segment Head for Middle Market Banking & Specialized Industries

JP MORGAN CHASE

"From a young age, my parents instilled in me a belief in the power of education and the importance of giving back to others. I'm thrilled to be joining this outstanding organization which will allow me to continue to pass that message on to Horatio Alger Scholars, who will undoubtedly become the leaders of tomorrow."

Frederic B. Luddy

Founder

SERVICENOW

"I believe that adversity is what makes you who you are. Losing my job and my life's earnings was one of the best things to ever happen to me. That situation forced me to figure out exactly what I wanted. I'm thrilled to become a part of the Horatio Alger Association and I hope that my story might serve as inspiration for some of its amazing Scholars."

Trevor D. Rees-Jones

Founder and CEO

CHIEF OIL & GAS LLC

"It is an honor to be inducted into the Horatio Alger Association and be surrounded by other dedicated individuals who have persevered through adversity and believe deeply in the power of education. I look forward to showing Scholars what's possible when you take chances."

Fredrick D. Schaufeld

Managing Director

SWAN & LEGEND VENTURE PARTNERS

"Giving back to others is a priority, especially to youth who have experienced hardships but persevered in spite of them. The Association's work is close to my heart, and I look forward to being able to interact with even more students as they work toward their dreams."

Rajesh Subramaniam

President and CEO

FEDEX CORPORATION

"I strongly believe that through hard work and perseverance, one can overcome adversity to achieve success. It is a privilege to accept membership into the Horatio Alger Association, an organization whose mission reflects this ideal."

S. Donald Sussman

Founder and Chairman

PALOMA PARTNERS

"I truly believe that education is a stepping stone to a better future, so throughout the years, I have searched for ways to give back to organizations that make college more financially accessible for those who wish to pursue it. The Horatio Alger Association is a wonderful example of the impact we can make on future generations."

To learn more about the inspiring life stories of the 2023 Horatio Alger Award Recipients and why each has been selected for lifetime membership into this Association, visit:

horatioalger.org/2023-award-recipients

$245 MILLION
IN SCHOLARSHIPS (1984-2023)

35K SCHOLARS

$387 MM ENDOWMENT

70% Scholar Graduation Rate
COMPARED TO NATIONAL LOW-INCOME GRADUATION RATE OF 16%

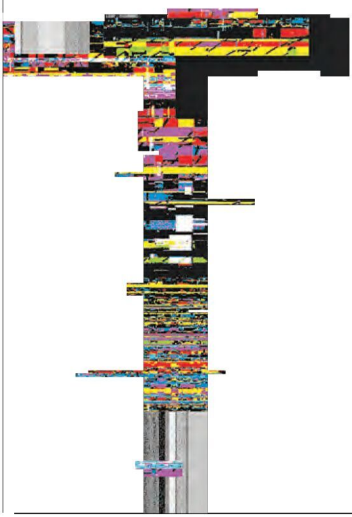
★★★★ CHARITY NAVIGATOR
Four Star Charity

HORATIO ALGER ASSOCIATION
of Distinguished Americans, Inc.
horatioalger.org

THE INVESTIGATION

FinTech's Judgment Day

Illustration by **Matt Chase** for Forbes



THE FUNDING FRENZY IS OVER. DOZENS OF ONCE-PROMISING FINANCIAL STARTUPS ARE NOW CHASING TOO FEW CUSTOMERS AND STARVING FOR CASH. FOR MOST, IT'S EITHER MERGE OR PERISH.

By **Jeff Kauflin** and **Emily Mason**

On November 15, the cofounders of Ribbon Home, a five-year-old financial technology company that promised to fix a "broken" homebuying market by offering buyers the ability to make all-cash offers, sent a cryptic and disconcerting email to its entire staff. "During this time of uncertainty, we ask team members who are not customer- or finance-facing to shift their focus from work to self-care, spending time with family and doing things that bring you comfort," it read in part.

Six days later, New York City–based Ribbon dismissed 85% of its staff—190 people—and cut severance to one week's pay versus the six weeks employees had been previously promised. Fewer than 30 people remain today, and the company recently announced that it has paused all new business.

Ribbon's days are numbered, but in September 2021, amid the pandemic housing boom, venture capitalists including Bain Capital and Greylock threw $150 million at the startup, valuing it at $500 million. The money was supposed to fuel explosive growth—the company predicted "$10 billion in home transactions annually"—and staff ballooned to 360.

Those easy-money days are over. Home mortgage rates have more than doubled since 2021, cooling the market and the need for all-cash offers. Ribbon, which likely never came close to being profitable, relied heavily on a continuous source of outside funding. Unlike traditional banks whose deposits fund home mortgages, Ribbon needed Wall Street firms to fund its customers' cash offers. Goldman Sachs and Waterfall Asset Management, Ribbon's primary financiers, have pulled back funding because Ribbon no longer meets their lending requirements. Ribbon declined to comment.

Like many once-promising fintechs, Ribbon is caught between Scylla and Charybdis. It's quickly running out of money, and its broken business model isn't going to generate fresh cash. Troubled fintechs can choose either to close up shop or sell the business at a fire-sale price. Says one fintech executive, "We have VCs tell us, 'Everything in our portfolio is for sale.'"

Fintech is the term widely used for technology startups focused on financial services. These fledgling companies were founded mostly in the last decade, with the goal of disrupting old-guard banks, insurers and credit card companies with whizbang tech. Only a few short years ago, venture capitalists couldn't get enough of the sector. In 2021, CB Insights reported that fintech outfits raised more than $140 billion in 5,474 funding rounds. That was more than the previous three years combined. As the public markets soared, many went public, raising $10 billion from some 28 fintech IPOs in 2020 and 2021, S&P Global Market Intelligence reports. Insta-billionaires were minted at companies such as Affirm (buy-now, pay-later loans), Marqeta (newfangled payment processing) and Upstart (AI-vetted loans).

But with the IPO market in a coma and fintech stocks down 60% from their peaks, venture investors and bankers have turned off the cash spigot, not just for new investments but for additional funding to existing portfolio companies. According to CB Insights, fintech funding sank to $11 billion in the fourth quarter of last year—the lowest level since 2018.

"Some VCs are saying, 'We don't know when we hit bottom on this thing,'" says one fintech executive. "'There's no price that we're putting in money.'" Adds Sheel Mohnot, a cofounder and general partner at Better Tomorrow Ventures: "We'll definitely see shutdowns this year. It's going to be painful."

A survey of 450 early-stage startups conducted last fall by January Ventures, a Boston-based venture firm, concluded that 81% had less than a year's worth of cash on hand. In a months-long investigation, *Forbes* used data from CB Insights and PitchBook to comb through more than 200 fintech startups whose last funding round was at least 18

"Some VCs are saying, 'We don't know when we hit bottom on this thing,'" says one fintech executive. "'There's no price that we're putting in money.'"

ZOMBIE FINTECHS

THESE 25 VENTURE-BACKED STARTUPS ARE FACING A TROUBLED FUTURE. SOME ARE CASH-STRAPPED; OTHERS HAVE BROKEN BUSINESS MODELS. GETTING ACQUIRED AT A DEEP DISCOUNT IS THE ONLY HOPE FOR MOST.

COMPANY	YEAR FOUNDED	DESCRIPTION	LAST FUNDRAISE DATE	LATEST KNOWN VALUATION	ESTIMATED HEADCOUNT CHANGE % (JAN '23 VS. JUL '22)	NOTES
Apto Payments	2014	**BANKING-AS-A-SERVICE (BAAS):** Helps other companies issue debit cards such as crypto-based cards and corporate charge cards.	April 2022	$172M	–44%	Category overcrowded; customers struggling. Asked if it's for sale: "We are pragmatic leaders and have conversations with strategic partners as appropriate."
Bond	2019	**BAAS:** Credit cards.	July 2020	$182M	–22%	Category overcrowded; customers struggling. Industry executives say Bond is talking to companies about selling itself.
Rize	2014	**BAAS:** Checking and savings accounts, brokerage accounts and money transfers.	Sept. 2021	$38M	–14%	Category overcrowded; customers struggling. Industry sources say Rize is trying to sell itself.
Synapse	2014	**BAAS:** Bank accounts, credit cards and crypto accounts.	May 2019	$181M	5%	Category overcrowded; customers struggling. Held recent conversations about selling, sources say. Spokesperson: "Synapse is cash flow–positive and growing with a strong balance sheet and currently not for sale."
Cardless	2019	**BAAS:** Co-branded credit cards.	July 2022	$315M	–19%	Cut roughly 25% of staff in December. "Our intention is to continue to scale and grow with independence and flexibility; 2022 was our most successful year," a spokesperson says.
Embroker	2015	**INSURANCE:** Small- to midsize business insurance.	June 2021	$450M	–9%	Founder/CEO left in January. Over the past year, three C-level executives have departed. "We have no plans to seek acquisition. If the right offer came along we would absolutely entertain it," a spokesperson says.
Rally	2016	**INVESTING:** Lets consumers buy shares of collectibles like rare cars and baseball cards.	Dec. 2021	$167M	–6%	App downloads have declined by 50%, with just 20,000 in Q4 2022, according to Apptopia. "Rally has more than two years of runway," a spokesperson says.
Vise	2016	**INVESTING:** Financial advisors can build custom portfolios for clients.	May 2021	$1B	–48%	2022 revenue well under $10 million. CEO Samir Vasavada says Vise has $70 million cash, over five years' runway. Claims Vise isn't considering selling but adds, "I could change my mind in a couple years."
Clearco	2015	**LENDING:** Focused on e-commerce businesses.	Dec. 2022	$2B	–44%	CEO Michele Romanow resigned in January; the company laid of 25% of staff last July. "We anticipate being profitable in the second half of 2023," the company says.
Plastiq	2012	**LENDING:** Lets small businesses pay bills with credit cards.	Jan. 2022	$941M	–9%	In distress due to rising risks of customer defaults and higher interest rates, which increase the cost of funding loans.
Aspiration	2013	**NEOBANK:** Promotes environmentally friendly spending.	Dec. 2021	$2.2B	3%	App downloads just 35,000 in Q4 2022, down from 400,000 in Q4 2021. CEO Olivia Albrecht: Aspiration is undergoing a major pivot—"an intentional shift in strategy from retail finance to carbon markets business more meaningfully."
HMBradley	2018	**NEOBANK:** High-yield checking accounts.	Dec. 2021	$170M	–15%	Small user base of tens of thousands of customers. "While acquisition is a possibility for HMB it will never be Plan A," says CEO and cofounder Zach Bruhnke.
Oxygen	2018	**NEOBANK:** Personal and business debit cards.	Nov. 2022	$450M	–46%	Business model still unproven; Oxygen had trouble raising venture funding in 2022 but is now taking on new investment at a significantly lower valuation, CEO Hussein Ahmed says.
Stash	2015	**NEOBANK:** Automated investing app.	Oct. 2022	$1.4B	–9%	App downloads of 480,000 in Q4 2022, down from 2 million in Q4 2021, according to AppsFlyer; spokesperson says Stash recently surpassed $100 million in annualized revenue.
Step	2018	**NEOBANK:** Designed for teenagers.	April 2021	$920M	–2%	Interchange-based business brings in little revenue. "The VC market does not impact us at all because we control our own destiny," claims CEO CJ MacDonald.
Varo	2015	**NEOBANK:** One of the only digital banks with a bank charter; broadly targets all Americans.	Sept. 2021	$2.5B	–8%	Has 14 months of operating capital, according to Q4 2022 regulatory filing. Spokesperson: "We remain confident in Varo's ability to successfully operate through this economic cycle."
Finix	2015	**PAYMENTS:** Helps other companies improve the profitability of their payment processing.	Aug. 2022	$450M	–7%	Limited market for its services (Finix disputes this); recently held conversations about selling itself, sources say. Spokesperson: "Finix receives regular offers . . . but we've never entertained one because our goal is to IPO."
Atlas *(formerly PointCard)*	2019	**PERSONAL FINANCE:** Initially a rewards debit card, now an upscale card costing $499 annually.	Sept. 2021	$286M	–37%	All debit accounts closed in September 2022 after bank partner stopped supporting. Atlas replaced its flagship product with a new charge card.
Petal	2016	**PERSONAL FINANCE:** Offers cards to help customers build credit.	Jan. 2022	$800M	–19%	In crowded credit card field. Launched Prism Data to sell its cash flow–based underwriting technology in 2021. Laid off 10% of staff in August 2022.
Qapital	2013	**PERSONAL FINANCE:** Budgeting and money-management app.	Dec. 2020	Unknown	1%	App downloads of 3,000 in Q4 2022, down from 81,000 in Q4 2021, reports Apptopia; industry source says it has been trying to sell. Co-CEO Katherine Salisbury: "Our growing team is focused on helping our users."
Flyhomes	2016	**REAL ESTATE:** Fronts money for cash offers, listing services and buy-before-you-sell service.	May 2021	$800M	–29%	Business suffering from real estate slowdown. "We're confident in the durability of our business model in the face of current macro and micro challenges," CEO Tushar Garg says.
Knock	2015	**REAL ESTATE:** Knock HomeSwap lends clients 100% of the money to buy a new home before selling their previous one.	June 2022	$1B	–11%	In March 2022, canceled $2 billion SPAC deal, laid off 46% of staff and reported valuation had been cut nearly in half. "We don't plan to raise money again and are 100% focused on profitability," the company says.
Ribbon	2017	**REAL ESTATE:** Enables clients to make cash offers on homes.	Sept. 2021	$500M	–92%	Business suffering from slowdown in real estate market. Credit line covenants breached. In November, Ribbon paused its services and shrunk staff by 85%.
Side	2017	**REAL ESTATE:** Technology platform for agents and independent brokerages.	June 2021	$2.5B	–8%	Business suffering from slowdown in real estate market. Reduced staff by 20% over two layoffs in 2022. "Side is in good financial health," the company says.
Spruce	2016	**REAL ESTATE:** "One-click" checkout for real estate transactions.	June 2021	$700M	–35%	Business suffering from slowdown in real estate market. This software provider expanded quickly post-fundraise; headcount is now declining.

Data sources: *PitchBook, the companies, LinkedIn, Apptopia* months ago. We then called dozens of insiders, investors, bankers, analysts and fintech founders to narrow the list of cash-starved startups to those with unproven and unprofitable business models. Many are clearly demonstrating signs of distress, such as mass layoffs. Our reporting also uncovered other troubled fintechs that have raised money more recently. In all, our 25 zombie fintechs *(see table, page 105)* have collectively absorbed some $7.5 billion worth of investor cash at recent valuations as high as $2.5 billion. Many of them will be purchased—or they'll perish.

"Behind closed doors," says Jigar Patel, who leads Morgan Stanley's investment banking business in fintech, "a lot of mergers-and-acquisitions conversations are going on."

No category within fintech may be more troubled than the so-called "neobanks." The idea behind these legacy-bank disruptors is simple: Offer basic consumer banking services like debit cards, credit cards and small loans on mobile phones. The apps minimize paperwork hassles, reduce fees and eliminate face-to-face meetings. During the pandemic, when millions banked minor windfalls in the form of stimulus payments, neobanks such as Chime, Current and Varo attracted scads of customers. CB Insights estimates that since 2020, 47 neobanks raised a combined $7.5 billion in venture capital.

Four-year-old Step is a Palo Alto, California–based neobank that provides savings accounts, credit cards and crypto investing for teens. In 2021, it secured a lofty $920 million valuation from backers including tech investor Coatue, payments giant Stripe and actor Will Smith. By the end of the year, it claimed 2.7 million customers, but its annual revenue was stuck in the single-digit millions, according to sources familiar with its finances.

Step's last equity funding occurred nearly two years ago, in April 2021, for $100 million. It has yet to break even. Last July it laid off roughly 20% of its staff, though its CEO, CJ MacDonald, framed the reductions as performance-based cuts and claims the firm's revenue surpassed $10 million in 2021 (he rebuffed *Forbes'* request for proof).

Another neobank, Aspiration, launched in 2014 with a climate-friendly mission that included the option of rounding up debit card purchases to the nearest dollar to plant a tree and had backers including actors Leonardo DiCaprio and Orlando Bloom. It saw its monthly application downloads drop from 400,000 per quarter at the end of 2021 to 35,000 per quarter at the end of 2022, according to Apptopia, a mobile analytics firm. Last October, its CEO resigned when a planned SPAC deal, which valued the money-losing company at $2.3 billion and promised to inject $400 million in fresh cash, was delayed. Aspiration recently made a hard pivot toward enterprise clients, promising carbon credit solutions to corporations, while its SPAC merger and IPO deadline have been extended to March 31, 2023.

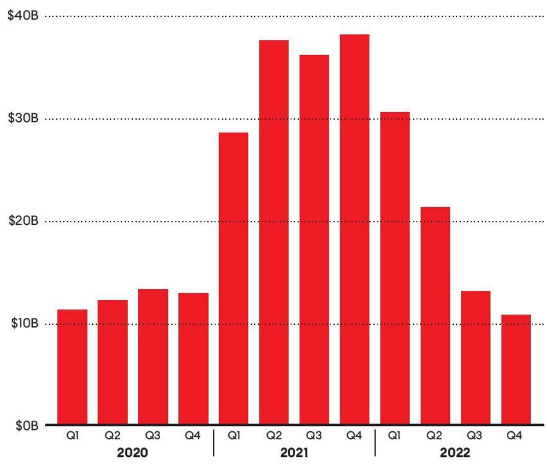
"Neobanks tried for 10 years, and they had more runway than I think anyone would've ever imagined," says one bank executive. "None of those businesses figured out how to make the economics work. Building a brand is too expensive. Acquiring customers via paid search and social media is too expensive. Building out expertise in lending is really hard and takes a lot of time."

Another huge obstacle: Neobanks aren't actually banks. Because they lack bank charters, if they want to lend to customers, they must pay fees to other banks or find investors to fund their loans. This gets expensive, especially when the cost of capital is greater than zero. Today the federal funds rate (the interest rate at which banks lend to one another) is around 4.25%, up from 0.08% a year ago.

Varo, a San Francisco–based neobank, spent $100 million to get its own bank charter so it could lend more profitably. Now it faces another challenge: It doesn't have a sizable deposit base from which it can make loans. As of the end of December, Varo reported 5.3 million accounts with a total of

DISAPPEARING DOLLARS

AS THE VALUE OF TECH STOCKS PLUMMETED IN 2022, VENTURE CAPITALISTS HAVE CUT BACK DRASTICALLY ON THE FUNDING THEY'RE PROVIDING FOR FINTECHS.



Source: *CB Insights*

$276 million in deposits, meaning its average account held just $52. One factor that is likely driving the tiny balances: Varo—which advertises no fees, early access to paychecks and 6% cash back on credit card purchases—caters to lower- and middle-income customers, many of whom aren't using Varo as their primary bank account.

Varo currently makes most of its money on interchange, the 1% to 2% fees merchants pay when consumers swipe their credit and debit cards, with lending making up less than 10% of its 2022 revenue. According to its most recent regulatory filing, it has 14 months' operating capital left.

"We remain confident in Varo's ability to successfully operate through this economic cycle," says a company spokesperson.

Neobanks aren't the only ones with flawed business models. Vise is a buzzy New York startup led by two 22-year-old founders that sells AI-powered software to financial advisors, enabling them to quickly create custom, low-cost investment portfolios. The startup hit a $1 billion valuation in a 2021 round backed by Ribbit Capital and Sequoia. Despite boasts that it had a big pipeline of assets coming from advisors, financial disclosures reveal that as of September 2022, its assets under management were just $362 million (Vise claims assets are close to $500 million). With fees of roughly 0.5% of assets, Vise's revenues are in the low millions. Given the abundant competition from existing portfolio management software platforms and advisors' reluctance to change, it's no wonder Vise is struggling.

Cofounder and CEO Samir Vasavada says his 50-person startup has $70 million in cash and over five years' worth of runway. Yet it has also been pursuing partnerships with large financial institutions, the types of deals that often end in acquisitions. Vasavada says Vise isn't considering a sale, but in the same breath, he adds, "I could change my mind in a couple years."

Then there's the problem of too many companies chasing too few customers.

"What if there's a softball game, and there's 16 kids with lemonade stands?" says Steve McLaughlin, founder and CEO of San Francisco–based, fintech-focused investment bank FT Partners. "The lemonade tastes great, but they're all going to go out of business."

> "What if there's a softball game, and there's 16 kids with lemonade stands? The lemonade tastes great, but they're all going to go out of business."

The overcrowding issue looms large for banking-as-a-service (BaaS) firms, an overhyped niche of startups trying to sell their software to other companies, especially neobanks, that want to offer financial products like checking and savings accounts. Two of the most well-established, publicly traded BaaS providers are both based in Austin, Texas: Q2, with a $1.8 billion market capitalization, and Green Dot, whose market cap is $940 million. Green Dot is only marginally profitable, and Q2 has never turned a profit since it IPO'd in 2014. In the last 12 months, it lost $100 million on $550 million in revenue. Since January 2020 alone, 13 different BaaS startups have raised a combined $2.1 billion in venture capital funding, according to CB Insights.

Not only are there too many BaaS vendors pursuing too few customers, most of which are themselves financially strapped, but expensive regulation is also on the horizon. In November, the Treasury Department issued a report recommending that companies, including BaaS providers, involved in "bank-fintech" relationships be subject to regulation and oversight by bank regulators including the Consumer Financial Protection Bureau.

It's therefore no surprise that lots of BaaS startups are now on the block. Rize, a New York–based BaaS company, is looking for a buyer, according to people familiar with the matter (Rize didn't respond to *Forbes'* requests for comment). So is Railsr, a BaaS in the U.K. Says a Railsr spokesperson, "The market conditions over the past 12 months are driving a race to scale and market consolidation."

San Francisco startup Synapse has more traction than most BaaS providers. But abusive management practices, including arbitrary public firings, prompted a talent exodus in 2020. Over the past six months Synapse has been shopping itself at a price significantly lower than the $180 million value it commanded in its last funding round in 2019, say industry insiders. "Synapse is cash flow–positive and growing with a strong balance sheet and currently not for sale," insists a company spokesperson, who also disputes that it had excessive employee departures.

A slew of BaaS failures poses a risk to the entire fintech ecosystem because their software provides vital connections to traditional banks. "What happens when your core infrastructure provider is an unprofitable startup and can't raise their next round?" asks Merritt Hummer, a fintech investor and partner at Bain Capital.

Not everyone believes fintech's bloodletting is a bad thing. Says one partner at a top venture capital firm: "I just see it as a natural part of how capital formation is done." Ⓕ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IN BLOCKCHAIN THEY TRUST

PHOTOGRAPH BY **GUERIN BLASK** FOR FORBES

Crypto is in crisis, but many of the world's biggest financial institutions are still banking on the underlying tech as the best way to build confidence with customers—and with one another.

BY **NINA BAMBYSHEVA**
AND **MICHAEL DEL CASTILLO**

Middleman Moves

Mastercard chief executive Michael Miebach wants to use blockchain tech selectively for things like speeding up cross-border payments. "It's not an either-or," he says.

"THERE WILL ALWAYS BE NEW PAYMENT TECHNOLOGY,"

says Michael Miebach, chief executive of Mastercard, the world's second-largest credit card company. "First there were cards using ISO 8583 [ISO numbers refer to international standards] messaging technology, which is 50 years old, then real-time payments became real with ISO 20022. And then came blockchain, and we said okay, what would that solve? There's a whole set of real-life problems out there that blockchain can solve."

In late January, the 55-year-old Miebach told analysts and shareholders that his company had surpassed 2 billion "tokenized" transactions per month, up 38% in a year, and that Mastercard was enabling digital payments in 110 countries. The big benefit? Less fraud.

Today, tokenization at Mastercard means replacing the 16-digit number on your plastic credit card with a supersecure unique digital record for every transaction, without ever leaving behind your identity in the form of a credit card number. It's not yet on a blockchain, but Mastercard is currently working with banks and merchants to tokenize a variety of assets, including deposits, which will be tracked on multiple public and private blockchains.

"You can tokenize anything," Miebach says. "I think we're going to have a world where everything will be tokenized and will be passed around in a safe fashion."

Mastercard is one of 22 financial companies that made *Forbes'* 2023 Blockchain 50 list of billion-dollar companies putting distributed-ledger technology to real use. Mastercard is also a prototypical corporate middleman. It raked in $22 billion in revenue and $10 billion in profit last year from the fees it charges merchants to, essentially, help customers spend their own money. In other words, Mastercard is exactly the type of company that crypto zealots love to hate.

Opportunity Headknocker

Derivatives trading and tokenizing bonds are just two of the crypto profit centers CEO David Solomon envisions for Goldman Sachs.

But it is trusted by millions of merchants worldwide. And in the wake of Web3's never-ending barrage of scandals, scams and swindles, trust is exactly what the sector needs. Smelling opportunity, blue chip financial giants, including BlackRock, JPMorgan and Fidelity, have become some of the biggest champions of the new technology.

"What do you need for blockchain to scale?" asks Miebach, whose company launched 35 new crypto-friendly debit and credit cards last year. "It scaled for traditional payments because people trust experience, they trust data privacy and they trust they won't be taken for a ride."

Other "TradFi" CEOs are right alongside Miebach, beating the crypto drum. In December David Solomon, the CEO of Goldman Sachs, penned an opinion piece in the *Wall Street Journal* headlined "Blockchain Is Much More Than Crypto," in which the boss of Wall Street's most iconic firm cautioned against dismissing the technology in the wake of the Sam Bankman-Fried/FTX fiasco. The crux of his argument? "Under the guidance of a regulated financial institution like ours blockchain innovations can flourish."

Big banks like Goldman have largely avoided directly investing in cryptocurrencies but have quietly been working with their underlying technology. "We see huge commercial opportunities," says Mathew McDermott, head of digital assets at Goldman Sachs. In November, his 70-person team underwrote a €100 million bond offering for the European Investment Bank in conjunction with Santander and Société Générale. The process took just 60 seconds. Typically, a bond sale like this takes about five days.

"[There are] people who would like to continue to trade the crypto market, and we're keen to [help] through derivatives or options," McDermott adds. One strong piece of evidence pointing to the value of trust: In 2022, big unregulated crypto exchanges like Binance, Huobi and OKX saw volume fall by more than 25% through September, while CME, Chicago's highly regulated futures trading exchange, saw increases of 62% in bitcoin futures and 80% in ethereum futures over the same period.

Likewise, Fidelity is seizing upon the crisis in crypto confidence by flooding Instagram feeds with advertisements for its soon-to-launch Fidelity Crypto. "Get on the early-access list to trade bitcoin and ethereum," reads one promotion. "Start with the names you know, invest with a name you can trust."

The nation's oldest bank, 238-year-old BNY Mellon, already offers digital asset custody for U.S. asset managers and provides back-office services to 19 Canadian crypto ETFs and mutual funds. Like David Solomon at Goldman, Mellon's chief executive, Robin Vince, took to the newspapers to announce the seriousness of his bank's crypto plans, writing a December article in the *Financial Times* entitled "Time for a Reset of the Crypto Opportunity."

JPMorgan's 66-year-old CEO, Jamie Dimon, called cryptocurrencies "decentralized Ponzi schemes" last fall, but his bankers have been hard at work using blockchain tech to execute $550 billion in repurchase agreements since 2020.

"The next generation for markets, the next generation for securities, will be tokenization," insisted Larry Fink, chief executive of BlackRock—the world's largest asset manager, with $8.6 trillion under management—at a DealBook conference in November. For now, BlackRock is mostly acting as a service provider for a select few so-called "crypto-native" companies. It has partnered with Coinbase to offer BlackRock's thousands of institutional investor and wealth management customers access to bitcoin and other cryptocurrencies through its Aladdin portfolio management software. It also holds $34 billion in Treasury bills as reserves for Circle's U.S. dollar–backed stablecoin, USDC.

While established financial institutions are shrewdly stepping forward to supplant crypto startups, there are worries among crypto industry purists over the future of blockchain technology. One schism: Web3 evangelists love open-source, decentralized "public" blockchains. Big enterprises (and totalitarian goverments) prefer "private" blockchains precisely because they offer more control.

That remains true even after some big private blockchain

SIMON DAWSON/BLOOMBERG

BLOCK BOMBS

IT'S BEEN A TOUGH YEAR FOR CRYPTO–AND BLOCKCHAIN HAS NOT BEEN SPARED. HERE ARE SOME BIG COMPANY BLOCKCHAIN PROJECTS THAT HAVE BEEN SHELVED.

A.P. Moller-Maersk

TradeLens, the blockchain platform Maersk co-developed with IBM, was launched in 2018 to cut time and paperwork out of tracking containers as they move through global seaports. But achieving the necessary level of cooperation between competitors and countries proved impossible, so Maersk will shutter it this quarter.

Australian Securities Exchange (ASX)

After five years of trying to build a blockchain replacement for its aged settlement system, Australia's primary stock exchange pulled the plug in November after Accenture found significant design flaws. ASX took a $170 million loss on the project.

Honeywell

The industrial conglomerate was using blockchain to digitize aircraft records and even had a marketplace for used aviation parts called GoDirect Trade. Development was halted as of November and staff working on the project have since left the company.

Silvergate Bank

The crypto-focused bank experienced a run related to the FTX blowout. Over the course of 2022, deposits shrank from $14.7 billion to $3.8 billion. Silvergate fired 40% of its staff and lost nearly a billion dollars. It also wrote down its purchase of Meta's failed Diem cryptocurrency project.

projects failed spectacularly. In 2020, former Blockchain 50 member Honeywell began using private blockchain Hyperledger Fabric for buying and selling used aerospace parts. Development was halted as of November 2022. Maersk and IBM scrapped their TradeLens global shipping supply chain blockchain in November after hiring 19 staffers and spending more than four years on the project.

Public blockchains can offer advantages in terms of speed and cost. Private equity pioneer KKR, whose funds manage $496 billion worth of assets, recently opened its $4 billion Health Care Strategic Growth Fund to distribution via Avalanche, a fast public blockchain that boasts 4,500 transactions per second (Ethereum can still handle only 15). Other Avalanche users include CME Group, payments company FIS and Mastercard.

In China, cryptocurrencies and crypto mining are illegal, but blockchain is an important part of President Xi Jinping's Vision 2035 national development strategy. None of China's sanctioned blockchains are public. China's blockchain technology base, including its Blockchain-based Service Network (BSN), which has been described as a digital Silk Road connecting (and monitoring) multiple blockchains, is far outpacing development in the United States.

Two years ago, Blockchain 50 member China Construction Bank built a platform that cuts out Swift, the most widely used interbank system for transferring funds. It recently launched a giant distributed ledger for credit reports that lets bank subsidiaries share information while complying with government privacy regulations. It has already used its blockchain to give $4.2 billion in credit to 2 million customers and hopes to reach 700 million people by mid-2025. In addition to China Construction Bank, five Chinese companies, including Tencent, WeBank and Alibaba's Ant Group, feature on this year's Blockchain 50.

Mastercard's Miebach thinks crypto's latest woes might actually speed up adoption of the new technology. "You are going to get more mainstream players in and the regulators are going to show up to address the risks," he says. "That's a recipe for this to become a mainstream technology. I think [crypto's] recent winter storm is going to help."

THE BLOCKCHAIN 50

Crypto is in the toilet. Even after a January rally that saw prices jump by a third or more, the cryptocurrency market is still down 38% over the last 12 months, wiping out some $630 billion of wealth. Faddish bits of the market, like NFT digital collectibles, have done even worse. Prominent prophets like Sam Bankman-Fried have been exposed as incompetent at best, criminal at worst. Despite it all, dozens of enterprises around the world are still quietly investing in blockchain, the distributed-database technology that underpins the entire sector. These mostly big, mostly smart firms aren't throwing good money after bad. They're doing it because blockchain helps their businesses operate better, faster or cheaper.

• • •

EDITED *by* NINA BAMBYSHEVA *and* MICHAEL DEL CASTILLO

Alphabet

MOUNTAIN VIEW, CALIFORNIA

In addition to investing more than $1 billion in blockchain startups through its venture capital arms, Google's Cloud division last January formed a specialized team devoted to helping startups access crypto market data more quickly. Via Coinbase, Google now accepts cryptocurrency as payment for cloud storage.

KEY LEADERS: Amit Zavery, Google Cloud; Sunita Verma, Labs at Google

Ant Group

HANGZHOU, CHINA

Alibaba's giant fintech affiliate has a proprietary blockchain running more than 50 apps. One of them, called the Treasure Project, helps museums and galleries popularize their collections by creating and distributing copies of ancient Chinese artifacts in the form of digital collectibles that are similar to NFTs. Ant has also developed an engine that it says is 15 times more efficient at storing blockchain data than mainstream providers. Topnod, a digital collectibles platform powered by Ant, is already using it and saves 75% on storage costs.

KEY LEADER: Geoff Jiang, Intelligent Technology Business Group

Aon

LONDON

Many organizations test job candidates. In June, the U.K. insurance giant launched a blockchain service that enables job seekers to store and share the results of their assessments (say, an IQ test or a coding exercise) with multiple employers, eliminating the need to take the test more than once. Aon will apply the service to the 30 million assessments it administers annually.

KEY LEADERS: Greg Case, CEO; Christa Davies, CFO

Apollo

NEW YORK

In April, the $40 billion (assets under management) private equity manager hired JPMorgan's cryptocurrency guru, Christine Moy, who wants to use blockchain to improve visibility into alternative investments like mortgages. In March the firm bought its first mortgage tracked on a blockchain, reducing the weeks-long settlement time to seconds.

KEY LEADER: Christine Moy, head of digital assets

"Crypto encompasses many things. We're focused on the technologies that can be applied and can scale, whether that's capital raising, securitization, even trading. It's rooted in real-world use cases that will make our business faster, more efficient, more accessible." —*Christine Moy*

Baidu

BEIJING

Baidu's new blockchain platform XuperAsset helps more than 400 companies issue digital collectibles—essentially Chinese NFTs, but because crypto trading is illegal in China, these nonfungible assets go by a different name there and resale is prohibited. Nearly 1 million copyrighted goods, mostly artwork and videos, have been created, generating around $35 million in fees for Baidu in the last 12 months. Outside of these non-NFT NFTs, more than 30,000 blockchain developers worldwide use Baidu's open-source code.

KEY LEADER: Xiao Wei, Baidu Blockchain

BlackRock

NEW YORK

Last summer, BlackRock began offering direct investment in bitcoin for clients. It also manages part of the reserves of stablecoin USDC *(see story)*.

KEY LEADERS: Robert Mitchnick, Digital Assets; Adam Salvatori, Digital Assets Lab

Block

SAN FRANCISCO

In addition to giving away its code to bitcoin developers, Block is working with Coinbase and Circle to build a way to prove one's identity without middlemen. Think using Facebook's login for other websites without handing Mark Zuckerberg your private information. It's part of Jack Dorsey's big vision to create an open-source "financial substrate" that will lie at the foundation of Cash App and Square, which have already generated $1.8 billion in bitcoin revenue since 2018.

KEY LEADER: Jack Dorsey, CEO

BNY Mellon

NEW YORK

In addition to providing custody services for crypto assets *(see story)*, it's also working with the New York Fed on a digital dollar pilot project.

KEY LEADER: Roman Regelman, Securities Services and Digital

Broadridge

LAKE SUCCESS, NEW YORK

The financial technology company is modernizing the repurchase agreement (repo) market by automating the life cycle of these contracts. Instead of manually booking transfers of collateral across each institution's systems, asset managers, banks and hedge funds can now transact with one another using a shared ledger. Launched in June 2020, Broadridge's blockchain platform is now averaging $50 billion in daily trading volume for users like Société Générale.

KEY LEADERS: Germán Soto Sanchez, Corporate Strategy; Prakash Neelakantan, Blockchain Strategy

Chainalysis

NEW YORK

At least $3 billion worth of crypto was stolen last year, and Chainalysis specializes in finding it. The 700-person firm scours blockchain transactions and smart contract data for the electronic footprints of hackers and scammers. More than 1,000 firms including Robinhood, Bitfinex and BNY Mellon, plus a slew of three-letter agencies such as the SEC, DEA and FBI, are customers.

KEY LEADERS: Michael Gronager, CEO; Jacob Illum, chief scientist

Coinbase

SAN FRANCISCO

Coinbase had a dismal 2022, losing 85% of its market value. Still, it remains the U.S.'s largest crypto exchange, holding $101 billion in assets for more than 100 million clients worldwide.

KEY LEADER: Brian Armstrong, CEO

China Construction Bank

BEIJING

The world's second-largest bank by assets is using blockchain to connect lenders with investors *(see story)*.

KEY LEADER: Hao Tan, CCB Fintech

"The internet requires a currency native to itself. And in looking at the entire ecosystem of technologies to fill this role, it's clear that bitcoin is currently the only candidate. It has proven resilience over a decade." —*Jack Dorsey*

CME Group

CHICAGO

The old-school futures trading exchange trades lots of crypto derivatives in a highly regulated environment. This reliability gives it a leg up over sloppy and bug-prone exchanges and Web3 projects *(see story)*.

KEY LEADER: Tim McCourt, Equity Index and FX Products

CHRISTINE MOY BY TAYLOR HILL-GETTY IMAGES; JACK DORSEY BY MARCO BELLO-AFP-GETTY IMAGES

De Beers

LONDON

De Beers, which sources diamonds in Canada, Botswana, Namibia and South Africa, has been using blockchain since 2019 to track the gems as they're mined, cut, polished and sold, and is now processing more than 100,000 stones a month. Overall, its Tracr blockchain keeps tabs on 600,000 registered diamonds, roughly 15% of the world's production—a haul of precious stones worth more than $2 billion.

KEY LEADER: Wesley Tucker, Digital Transformation

Estée Lauder

NEW YORK

People care about what they put on their skin, so cosmetics behemoth Estée Lauder is blending blockchain technology with its brands like Aveda to track components such as vanilla extract and pomegranate seed oil, whose supply chains are vulnerable to environmental and labor issues.

KEY LEADER: Christine Hall, Aveda R&D

ExxonMobil

IRVING, TEXAS

When Exxon contemplates drilling a new oil well with a partner or expanding a joint-venture pipeline, it's put up for a vote. For the past 100 years this process has involved distributing round after round of paper ballots. Exxon's pilot project with GuildOne uses Corda blockchain to speed the process, eliminate disputes and save on mailings. Another pilot with the Blockchain for Energy consortium aims to simplify the often complex process of royalty payments to landowners.

KEY LEADERS: Raj Rapaka, Digital Transformation; Adam Brown, intellectual property counsel

Fidelity

BOSTON

In November, just as the demise of crypto exchange FTX was panicking investors, solid-as-a-rock mutual fund giant Fidelity, already a digital asset custodian for institutions, announced it would soon let its 36 million retail customers buy and sell bitcoin and ether, commission-free.

KEY LEADER: Abigail Johnson, CEO; Tom Jessop, Digital Assets

FIS

JACKSONVILLE, FLORIDA

This large Florida payment processor has been handling debit card transactions for Coinbase customers since 2017. FIS also works with Binance and Kraken, and in 2021 it facilitated $30 billion worth of card-to-crypto transactions (merchants are paid in U.S. dollars out of customers' crypto balance). In April 2022, it partnered with Circle to let merchants settle with each other using stablecoin USDC, which is pegged one-to-one to the U.S. dollar.

KEY LEADER: Himal Makwana, Product Strategy and Web3

Franklin Templeton

SAN MATEO, CALIFORNIA

Building on its $100 million Franklin OnChain U.S. Government Money Fund, which is tracked on a blockchain, in April 2022 the $1.4 trillion (assets) asset manager invested an undisclosed sum in Eaglebrook Advisors, a Miami-based startup that creates crypto portfolios (both actively and passively managed) for investment advisors and institutions.

KEY LEADER: Roger Bayston, Digital Assets

Fujitsu

TOKYO

The electronics powerhouse runs a blockchain innovation lab in Brussels for more than 50 clients including Italian carmaker Iveco and beer giant Anheuser-Busch. In July, it partnered with Tokyo chemical conglomerate Teijin to create a blockchain for manufacturers looking to offset their carbon footprint by using recycled materials. The software verifies the origin of recycled materials and then tracks a firm's carbon footprint over time—making it difficult to falsify or greenwash data.

KEY LEADERS: Frederik De Breuck, Enterprise Blockchain Solution Center; Shingo Fujimoto, Fujitsu Research

Genentech

SAN FRANCISCO

Since 2018, Genentech has been working with blockchain builder Chronicled and drug companies such as Amgen, Pfizer and Bayer on MediLedger, a distributed ledger that helps pharma fight counterfeit medicines. The Drug Supply Chain Security Act of 2013 requires that American drugs be serialized and traceable. Today, 95% of medications resold in the United States after being returned can be verified through MediLedger. Soon it will use the blockchain to pool purchasing power with industry partners for discounts from vendors.

KEY LEADER: David Vershure, vice president, channel and contract management

Goldman Sachs

NEW YORK

Blockchain is helping the Wall Street titan dramatically speed bond underwriting *(see story)*.

KEY LEADER: Mathew McDermott, Digital Assets

HSBC

LONDON

The British bank is using blockchain to increase the efficiency of foreign-exchange flows among its global branches. Since 2019, its FX Everywhere platform, which now also includes Wells Fargo, has settled trades with a nominal value of more than $4.6 trillion. Blockchain technology is also enabling HSBC to reduce bond settlement time from about four days to one.

KEY LEADER: Mark Williamson, FX Trading and Risk Management

Industrial and Commercial Bank of China

BEIJING

The $5 trillion (assets) bank has more than 100 blockchain products either rolled out or in development, but its work on Chinese digital currency—RMB smart contracts—stands out for the way in which it helps protect customers' funds for digital transactions. For example, a villager in Chengdu received his payment in digital RMB through a smart contract that ensured it came through as soon as he had finished planting his quota of trees.

KEY LEADER: Chaowei Liu, principal manager

JPMorgan

NEW YORK

Last Halloween, Onyx, its business unit that focuses on cutting-edge technologies, ran its first decentralized finance transaction on a public blockchain, using Ethereum to exchange Japanese yen for Singaporean dollars. Settlement time dropped from two days to mere seconds, and the tech enabled participants to prove their identities without needing to reveal them on the public blockchain. Additionally, JPMorgan has used blockchain to execute repurchase agreements *(see story)* and has transferred $25 billion using the JPM Coin network.

KEY LEADER: Umar Farooq, CEO of Onyx by JPMorgan

"We believe blockchain has the potential to rewire the core infrastructure of financial services."

—*Umar Farooq*

Kakao

JEJU, SOUTH KOREA

Despite a roughly 50% drop in NFT sales for the last six months of 2022 versus the previous year, Kakao's NFT marketplace has 2 million registered users and is available to anyone who uses Kakao Talk, which is about 90% of South Korea's 52 million people. Around 60 games are in development on Klaytn, Kakao's blockchain.

KEY LEADER: Sangmin Seo, Klaytn Foundation

KKR

NEW YORK

In September the storied private equity firm opened one of its funds for sale on the Avalanche blockchain, reducing costs to outside investors *(see story)*.

KEY LEADER: Dan Parant, U.S. Private Wealth

Line

TOKYO

Japan's leading messenger app helps create NFTs for 26 big customers including SoftBank, South Korea's Naver search engine and Visa on a new global platform called Dosi. Despite the NFT bust, more than 100,000 people have registered on Dosi to collect things like images of K-pop stars since September.

KEY LEADERS: Youngsu Ko, Line Next; Inkyu Lim, Line Xenesis; Woosuk Kim, Line Tech Plus and Line Next

Mastercard

PURCHASE, NEW YORK

The credit card company is all in when it comes to Web3. In 2021 it acquired crypto security firm CipherTrace, which fights fraud by identifying risky cryptocurrency transactions. In 2022, 35 crypto companies, including Binance and Nexo, issued debit cards emblazoned with the Mastercard logo *(see story)*.

KEY LEADER: Raj Dhamodharan, head of crypto and blockchain

McCormick & Company

HUNT VALLEY, MARYLAND

The spice and seasoning giant is using QR codes connected to a blockchain to ensure that the vanilla it sources from Madagascar is free of any connection to deforestation. So far, the project is limited to France and Switzerland, but the blockchain-traced vanilla still ends up in more than 3,400 stores.

KEY LEADERS: Clare Menezes, Global Food Integrity & Risk Management; Iwona German, Western Europe marketing director

Meta

MENLO PARK, CALIFORNIA

Since its October 2021 rebranding, Meta has spent billions on its Reality Labs division attempting to give the "metaverse" a pulse. By CEO Mark Zuckerberg's own estimation, losses will continue for years. In the here and now, Meta is giving users the tools to create and share (but not buy and sell) their own NFTs across Facebook and Instagram.

KEY LEADERS: Mark Zuckerberg, CEO; Andrew Bosworth, CTO

National Basketball Association

NEW YORK

The league's Top Shot platform, a digital collectible marketplace, was one of the great early NFT success stories, banking $1 billion–plus in sales since it launched in 2020. Outside of Top Shot, which has seen its trading volume crater to just $3 million in January, the NBA is working to increase fan engagement by handing out free NFTs to all 9,000 fans attending a July WNBA game in Chicago. It also hosts a free NFT fantasy basketball league created by French startup Sorare.

KEY LEADERS: Adrienne O'Keeffe, Global Partnerships and Media; Amy Brooks, chief innovation officer

"The future of basketball and the NBA will be defined by digital innovation and our ability to reach fans on their preferred device and language. We are truly just scratching the surface with regard to what we can accomplish in the Web3 space." —*Adrienne O'Keeffe*

"We enable people to spend crypto using their Mastercards and help banks understand crypto transactions through our blockchain analytics. When consumers want to cash out to a bank account, our Mastercard Send network enables this. The trust of our network is paramount."

—*Raj Dhamodharan*

Nike

BEAVERTON, OREGON

In December 2021, Nike acquired RTKFT, the virtual clothing startup that helped launch Cryptokicks. Collectors can now own both physical and digital versions and wear them in Nikeland in the

Roblox metaverse. The sneaker giant's Cryptokicks "forges" NFTs to its shoes by fitting each pair with a tiny chip linked to a blockchain. Next up: Swoosh, which will let customers design—and trade—their own digital kicks.

KEY LEADERS: Steven Vasilev, Benoit Pagotto and Chris Le, RTFKT cofounders

"The future will be built by internet/technology native kids. We aim to empower the next generation of creators and democratize access through creation. In the future people will care more about their virtual items than their physical items." *—Steven Vasilev*

NTT

TOKYO

The data and IT consulting subsidiary of Nippon Telephone & Telegraph, NTT Data, helped create an interbank reconciliation tool for Italian lenders on a blockchain called Spunta Banca. It has handled 623 million transactions for roughly 100 Italian banks since March 2020, performing real-time checkups to ensure there are no mismatches in bank transfers.

KEY LEADER: Shinichi Yamashita, Blockchain Strategy

Oracle

AUSTIN, TEXAS

India's Delhi University awarded digital degrees to 170,000 students in 2022 and distributed the diplomas on a blockchain to ensure authenticity. Keep Sea Blue, a nonprofit based in Athens, Greece, helps partners verify removed and recycled plastic waste from the Mediterranean via a blockchain. Global Shipping Business Network, a consortium whose members handle one in every three shipping containers in the world, increases the efficiency and visibility of shipments. All used Oracle's OCI Blockchain Platform.

KEY LEADER: Wei Hu, High Availability Technologies

PayPal

SAN JOSE, CALIFORNIA

The payment giant, which started offering access to crypto in October 2020, charges as little as 49 cents for smaller transactions. Crypto users, according to the company, visit PayPal twice as frequently as other users. It invested in Aptos Labs, parent of fast blockchain Aptos, created by Facebook veterans, last spring.

KEY LEADER: Dan Schulman, CEO

Repsol

MADRID

Spain's oil giant is building a platform called VEIA Digitalis, which enables users to store things like driver's licenses, security badges and passports in a blockchain-based "self-sovereign" wallet. The point is to allow people—mostly Europeans who live in government-intensive societies—to control which parts of their identity they want to share, and with whom. The project began in 2019 through Repsol's work with the global blockchain consortium Alastria.

KEY LEADER: Nuria Avalos, digital consortium director

Robinhood

SAN FRANCISCO

The zero-commission broker offers crypto trading to 23 million accounts, and as of last September, the company was a custodian for $9.4 billion worth of crypto. Robinhood Wallet is its proprietary Web3-friendly self-custody wallet for users who want to have full control of their assets, which more do in the wake of the FTX bankruptcy. More FTX fun: Some 7% of Robinhood stock tied to Sam Bankman-Fried was seized by the Department of Justice in January.

KEY LEADERS: Vlad Tenev, CEO; Christine Brown, COO

Samsung Group

SEOUL

It's best known for smartphones and flat screens, but Samsung is also a leader in developing blockchain products and services. For example, AIA, the largest insurance company in the Asia-Pacific region, uses Samsung's blockchain Nexledger to quickly access clients' personal information and process consent forms including insurance agents' electronic signatures, reducing related costs by more than half. More than 150,000 Samsung employees use the in-house blockchain service to store things like product design documents and salary contracts; one big benefit is that they can't be easily altered or deleted.

KEY LEADER: Jihwan Rhie, Blockchain Business Planning

Signature Bank

NEW YORK

Signet, Signature Bank's Ethereum-based payments network for commercial customers, instantaneously processed $464 billion worth of digital transactions last year. One-fifth of Signet's 2022 volume came from the logistics industry. Due to market volatility, the bank capped its crypto deposits at 20% of its total assets under management.

KEY LEADER: Frank Santora, chief payments officer

Société Générale

PARIS

The financial giant is helping other institutions use public

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STEVEN VASILEV BY TIM TADDER FOR FORBES

blockchains to record information about who owns registered bonds. In October it became the first bank in France to receive permission to handle assets issued on a blockchain.

KEY LEADER: Jonathan Benichou, CFO, SG Forge

Sotheby's

NEW YORK

The NFT market is in a deep depression, but Sotheby's still has a dedicated team of 20 focused on digital collectibles. It will soon launch a curated secondary market built on Ethereum and Polygon in which a rotating list of ten handpicked artists will sell their NFTs, with Sotheby's taking a cut.

KEY LEADERS: Stefan Pepe, CTO; Sebastian Fahey, Sotheby's Metaverse

Tech Mahindra

PUNE, INDIA

This IT conglomerate has partnered with ten major Indian telecoms—which collectively provide service to 1 billion customers—to use blockchain to fight spam calls and unwanted texts. If one telecom operator receives a complaint, all operators are alerted—and thanks to the magic of blockchain they don't need to share sensitive customer info.

KEY LEADER: Rajesh Dhuddu, Blockchain and Metaverse

"We continue to work hard to further empower individual users to not only safeguard their individual data but also have complete control over who accesses it and how it gets democratized and monetized." —*Rajesh Dhuddu*

Tencent

SHENZHEN, CHINA

The owner of China's ubiquitous social platform WeChat is using blockchain tech to help Chinese companies cut costs and speed up business. Using Tencent's software, thousands of Chinese companies have been able to move their products through customs up to 50% faster. Additionally, about 400 million users in nearly a dozen Chinese cities use Tencent's blockchain to pay taxes, settle medical bills and even process donations.

KEY LEADER: Powell Li, Tencent Cloud Blockchain

Ticketmaster

LOS ANGELES

Through its NFL partnership, Ticketmaster is giving football fans who attend games commemorative NFTs—a blockchain option for avid ticket collectors.

KEY LEADER: Brendan Lynch, Enterprise and Revenue

Visa

SAN FRANCISCO

Like Mastercard, Visa issues credit cards allowing users to pay with their crypto holdings. Some of the cards even offer cash-back . . . er, bitcoin-back deals. It issued 10 cards last year, including one for now-bankrupt FTX. Five were from entities outside the U.S., including Ripio and Lemon Cash in Argentina.

KEY LEADER: Cuy Sheffield, VP Crypto

Walmart

BENTONVILLE, ARKANSAS

America's superstore—and largest grocer—uses blockchain to track the farm-to-store journey of 1,500 food products from 70 suppliers, which makes it easier to spot cases of contamination or spoilage. Walmart is also experimenting with blockchain-based invoices, which quicken the process from some three months to near real time.

KEY LEADERS: Archana Sristy, Blockchain Platforms; Tejas Bhatt, Global Food Safety Innovation

"Customer trust and safety are paramount; that's why we're committed to developing industry-leading blockchain platforms that allow us to quickly identify potentially contaminated products at any point of their journey across our entire supply chain ecosystem." —*Archana Sristy*

Warner Music Group

NEW YORK

The label behind Lizzo and Chris Stapleton is working with blockchain game developer Splinterlands (1.8 million users) to create arcade-style games that reward players with in-game items and a cryptocurrency called dark energy crystals, which has a market value of some $700 million.

KEY LEADER: Oana Ruxandra, chief digital officer

WeBank

SHENZHEN, CHINA

To process loans, banks typically require customers to produce reams of documents including titles and credit reports. It's an area of friction in finance. WeBank's new information verification platform, launched in April and used by roughly 2.5 million people, connects the notary office and borrowers via a single blockchain-based network to speed up and improve the application process. Approval rates for online auto loans requested by car buyers, for one, have gone from 20% to 80%.

KEY LEADER: Henry Ma, CIO

Wipro

BENGALURU, INDIA

The Indian technology and consulting firm has created a blockchain platform that combats data tampering to help prevent identity fraud. Since September, some 1.6 million people have used it to share information with banks, colleges and other organizations.

KEY LEADER: Varun Dube, Blockchain

Tools

Stone tools are fossilized human behavior."
—Louis Leakey

"The rung of a ladder was never meant to rest upon, but only to hold a man's foot long enough to enable him to put the other somewhat higher."
—Thomas Henry Huxley

"Eliminating impediments, we will surely be catching up with our machines, resembling them more and more impeccably."
—Amy Leach

"We become what we behold. We shape our tools, and thereafter our tools shape us."
—Marshall McLuhan

"Prosperity is only an instrument to be used, not a deity to be worshiped."
—Calvin Coolidge

"Human toolmakers always make tools that will help us get what we want, and what we want hasn't changed for thousands of years—because as far as we can tell, the human template hasn't changed either."
—Margaret Atwood

"A worker may be the hammer's master, but the hammer still prevails."
—Milan Kundera

"If it keeps up, man will atrophy all his limbs but the push-button finger."
—Frank Lloyd Wright

"We are too prone to make technological instruments the scapegoats for the crimes of those who wield them."
—David Sarnoff

"A machine is more blameless, more sinless even than any animal. It has no intentions whatsoever but our own."
—Ursula K. LeGuin

More Than Meets the AI

November 30, 1998

ChatGPT, the artificial intelligence software rewriting our future—or, at least, future college essays—may be the technology of the moment, but 25 years ago AI offered another shiny new toy. In November 1998, Christy Jones, a 29-year-old cofounder of software giant Trilogy, appeared on the cover of *Forbes* for having taken AI out of the science fiction pages and into the quotidian—namely, PC sales. **Jones' software company, pcOrder.com, used AI as a tool to analyze hundreds of thousands of computer components** to determine things like which played well together and which were in stock. The technology was integrated into online storefronts she sold to manufacturers such as HP and IBM at the dawn of e-commerce. "The grand vision is to have every single computer bought using pcOrder technology," said Jones, whom *Forbes* dubbed "the new face of AI." Alas, the shine wore off two years later: In October 1999, soon after its IPO, pcOrder had a $590 million market cap ($1 billion in today's dollars), but by December 2000 its lack of profits brought it back to earth. Trilogy bought the company for $32 million (or $54 million today) and shuttered it. If only the AI had seen it coming.

SOURCES: IN OTHER WORLDS: SF AND THE HUMAN IMAGINATION, BY MARGARET ATWOOD; THE DOOR INTO SUMMER, BY ROBERT A. HEINLEIN; MAN'S PLACE IN NATURE, BY THOMAS HENRY HUXLEY; THINGS THAT ARE, BY AMY LEACH; THE LATHE OF HEAVEN, BY URSULA K. LEGUIN.

"The world grows steadily better because the human mind, applying itself to environment, makes it better with horse sense and science and engineering."
—Robert A. Heinlein

"Men are more important than tools. If you don't believe so, put a good tool into the hands of a poor workman."
—John J. Bernet

"Man has become less rational than his own objects, which now run ahead of him, organizing his surroundings and thus appropriating his actions."
—Jean Baudrillard

"Just because something doesn't do what you planned it to do doesn't mean it's useless."
—Thomas Edison

"Does the ax raise itself above the person who swings it, or the saw boast against the one who uses it? As if a rod were to wield the person who lifts it up, or a club brandish the one who is not wood."
—Isaiah 10:15

FINAL THOUGHT

"Ideas are the raw material of progress. But an idea by itself is worth nothing. An idea, like a machine, must have power applied to it before it can accomplish anything."

—B.C. Forbes


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