

# Alumni Bulletin

DECEMBER  
2017

## McMAKEOVER

— 54 —

Redefining  
McDonald's for the  
modern era

## YEAR IN REVIEW

— 40 —

2017's most  
important  
takeaways



DAVID BIRNBAUM

*Rare 1*



IMAGE-4265  
16" Tahitian  
24" Golden  
36" South Sea

each  
15mm X 13mm

video clips  
available



DAVID BIRNBAUM\*

Private Jeweler to the World's Elite™

589 Fifth Avenue @ E. 48<sup>TH</sup> Street Seventh Floor New York 212.575.0266 David.Birnbaum.NY@gmail.com www.RARE1.com

*a direct prime source for gem pearls*

\*HBS 1974

## Features

40 **Year in Review 2017**  
**Edited by April White**  
Alumni experts on the year's most important business trends—and HBS faculty on what to look for in the future

48 **Yoga Inc.**  
**By Deborah Halber**  
How far can the yoga industry stretch beyond its spiritual roots?

54 **Happy Meals (Are Here Again)**  
**By Dan Morrell**  
The McDonald's turnaround isn't about reinvention—it's about remembering what made the Golden Arches a global icon in the first place

DECEMBER  
2017

## Interest

06 Alibaba's blockbuster ambitions, turning tables at Marks & Spencer, and a safer way to name your startup

## Ideas

25 AI's growing impact, the best business books of 2017, and how content is driving VR adoption

## Etc.

**17 Impact**  
The HBS Campaign Newsletter

**CN1 Class Notes**

**ON THE COVER:**  
Illustration by The Voorhes  
**ABOVE:** Photo by Melissa Gayle



# 7 THINGS YOU'LL LEARN IN THIS ISSUE

Why robots will save manufacturing jobs **P. 36** // Projected size of the US doctor deficit by 2025 **P. 34** // The optimal personality mix for effective brainstorming **P. 37** // Speed record for a battery-powered “quadcopter” drone **P. 06** // Why real estate investing went global **P. 45** // The percentage rise in yoga practitioners over the past four years **P. 48** // How to fix DC's dysfunction **P. 10**

# FOUR PROGRAMS.

# A LIFETIME OF BENEFITS.

**COMPREHENSIVE  
LEADERSHIP  
PROGRAMS**

From top executives and general managers to high-potential leaders and business owners, each comprehensive leadership program delivers a transformative HBS experience. Participants will return to their organizations with a refreshed perspective and lifelong connections—ready to lead at the next level.

**OWNER/PRESIDENT MANAGEMENT**  
BEGINS 09 SEP 2018

**ADVANCED MANAGEMENT PROGRAM**  
BEGINS 02 APR 2018

**GENERAL MANAGEMENT PROGRAM**  
BEGINS 15 JAN 2018

**PROGRAM FOR LEADERSHIP DEVELOPMENT**  
BEGINS 09 JUL 2018



**HARVARD  
BUSINESS SCHOOL**

Executive Education

**LEARN MORE AT [WWW.EXED.HBS.EDU/HBSB-CLP](http://WWW.EXED.HBS.EDU/HBSB-CLP)**

# Air Time

## CITED

“If we don’t help them, they will likely not break the cycle of recidivism. And the cost will be much more than dollars—it will be the lives of them and their families.”

—Entrepreneur, investor, and photographer **Chris Michel (MBA 1998)** on his experience visiting and photographing Pelican Bay State Prison inmates during a business plan competition and graduation ceremony for incarcerated “entrepreneurs-in-training” (see right). The events were part of a program led by Defy Ventures, which runs entrepreneurship programs at prisons throughout the country.



## INPUT

**@HBSAlumni:**

How do you step outside your comfort zone?

**@cch** Charles C. Huang (MBA 2009):

Every week I commit to trying something new physically, mentally, or emotionally. So that could be a new workout, reading a new book, or art!

## OVERHEARD

“All leadership is very close in nature to friendship. That’s all you’re doing—trying to connect with people, trying to get them to trust you. And the more authentic that bond is, the better leader you become.”

—**Sarah Wright (MBA 1997)** sharing the best business advice she’s ever received—one of dozens of alumni who shared the words of wisdom that shaped their career for a special edition of our *Skydeck* podcast. (Wright, founder of Hull Street Energy, also reflects on the year in energy trends on page 49.)

**HBS**  
Alumni Bulletin

VOL. 93 NO. 4

**Tom Witkowski**  
Senior Director,  
Alumni Marketing  
and Communications

**William Weber**  
Director, Alumni  
Communications

**Dan Morrell**  
Associate Director,  
Content Manager

**Julia Hanna**  
Associate Director,  
Senior Content  
Producer

**April White**  
Associate Director,  
Senior Content  
Producer

**Keith Larson**  
Class Notes Editor

**David Kroll**  
Web Producer

**Jane Mazzarella**  
Business Manager

**Linda Kush**  
Communications  
Coordinator

**Mary Barnes**  
Copy Editor

**Carolann Barrett**  
**Fran Fahey**  
**Ben Henry**  
Class Notes  
Copy Editors

**EmDash**  
Design  
Austin, TX

The **HBS Alumni Bulletin** (ISSN 1553-1546) is published four times a year (March, June, September, and December) by Harvard Business School, Soldiers Field, Boston, MA 02163. Tel. (617) 495-6554. Fax (617) 495-7558. Class Notes (617) 495-6072. Email [bulletin@hbs.edu](mailto:bulletin@hbs.edu). Annual subscription: \$50 (foreign \$65). Periodicals postage paid at Boston, MA, and additional offices.



POSTMASTER: Send address changes to HBS Alumni Records, Soldiers Field, Boston, MA 02163, [alumni\\_records@hbs.edu](mailto:alumni_records@hbs.edu)

©2017 by the President and Fellows of Harvard College.

For advertising information, contact Bob Fitta, (617) 496-6631.

# HARVARD STUDENTS ARE AN INVESTMENT ONE SHOULDN'T OVERLOOK.

**Over the last 3 years, Prodigy Finance has enabled alumni and other investors to pave the future for over 21 Harvard University students.**

**This means our investors earn a financial return, with social impact.**

**Learn more at [prodigyfinance.com](http://prodigyfinance.com)**

With respect to the United States, these bonds will be sold outside the United States to non-U.S. persons in reliance on Regulation S. Notes will be sold in the U.S. to U.S. Persons who qualify as "Accredited Investors" under SEC Rule 506(b) or Rule 506(c) of Regulation D, as applicable. We may require you to provide such information, documentation or third-party confirmation as we deem necessary to satisfy the "reasonable verification requirement" contained within Rule 506(c) of Regulation D.

This product may have limited or no liquidity and you may find it difficult or impossible to realise the value of your investment. Your Capital is at risk, be aware that by investing in this product you may lose some or all of the money invested. You have limited recourse to the issuer of the security, no recourse to the borrowers, and there are other risks including those relating to the default or insolvency of the issuer who is not an authorised or regulated firm. This product is targeted exclusively at investors who are sufficiently sophisticated to understand these risks and make their own investment decisions.

Prodigy Services Limited promotes offers of securities for third party issuers to eligible investors. Prodigy Finance Limited loans are offered to eligible borrowers who are studying outside of their country of residence and the loans are governed by English law. Prodigy Services Limited is an Appointed Representative of BriceAmery Capital Limited which is authorised and regulated by the Financial Conduct Authority under FRN 489602. Prodigy Finance Limited is authorised and regulated by the Financial Conduct Authority for certain consumer credit activities and for certain investment activities under FRN 709641. Prodigy Finance Limited and Prodigy Services Limited are incorporated in the United Kingdom with registered address at Palladium House 1-4 Argyll Street, London, W1F 7LD. This document has been issued by BriceAmery Capital Limited as a Financial Promotion under Section 21 of the Financial Services and Markets Act 2000. PSL\_16062017\_P\_H\_CAT4

# Inbox

From Das's desk

**A**N OLD ADAGE ABOUT VOLUNTEERS CITES THE VALUE THEY BRING TO organizations as including “wealth, work, and wisdom.” These “three Ws” define the dedicated alumni body here at HBS. Although being a donor is certainly critical to sustaining the economic model of the School, in this column I want to address the other two Ws—work and wisdom—and an evolving vision of alumni engagement.

By raising your hand as a volunteer, you are strengthening the HBS brand by embodying the pay-it-forward spirit—whether to current and future students or to fellow alumni.

You might be thinking “I don’t have time to mentor students” or “I feel awkward asking classmates for donations.” That’s fine; tell us how you *would* like to get involved. In the last few years we’ve added a number of new volunteer roles that have expanded our spectrum of engagement but don’t necessarily require a heavy lift. Give us a day, or even a few hours. Host a dinner at your home for recent graduates or current students. (We’ll even provide the food!) Put your name on the list of MBA Career Advisors, who make an hour available to a student who wants to know what it took to get your job. Get involved in a new category of programs we’re calling “HBS enabled/alumni owned,” such as our Alumnae Circles, where we work with you to get an effort off the ground, and you take it from there. Or join an alumni club, where leaders organize events that strengthen alumni-to-alumni and alumni-to-HBS connections on the regional level, with opportunities that include judging the New Venture Competition and working on a Community Partners team.

Any of these roles is proof that you see the importance of maintaining your connection with the School and the value of paying back and paying forward the benefits you received here. You become part of a virtuous circle of alumni engagement.

Another way to contribute work and wisdom is to think about how your experiences as an alumnus are shared by your fellow graduates, and then explore ways to meet that need. After attending his 25th Reunion last year, for example, an alumnus was inspired to ask if the School could do more for alumni like him to guide them into the next stage of their



Our task is to make ourselves and the School more relevant in your lives. We can achieve this goal most completely when you join us.

career and life purpose. His question dovetailed with our own thinking about increasing lifelong learning opportunities, and that led to development of a pilot, three-day program of introspection and peer interaction called The Reflective Leader.

In External Relations, our task is to make ourselves and the School more relevant in your lives. We can achieve this goal most completely when you join us. Across the arc of your career and life, there will be ever-changing ways to engage and re-engage. The question today is, how can you—and the School—benefit from your work and wisdom?

*Das Narayandas is Senior Associate Dean, External Relations and Harvard Business Publishing, and the Edsel Bryant Ford Professor of Business Administration.*

**+ONLINE**  
Learn more about The Reflective Leader program at [alumni.hbs.edu/reflectiveleader](http://alumni.hbs.edu/reflectiveleader)

Drone Racing League  
Founder and CEO Nick  
Horbaczewski is having a  
magic moment.

# Interest

## 12|2017

@SOLDIERS FIELD	10
IN MY HUMBLE OPINION	13
3-MINUTE BRIEFING	14
TURNING POINT	16

### RISING MARKETS

## Flight Path

Tracking drone racing's ascent

DRONE RACING LEAGUE (DRL) FOUNDER AND CEO **Nick Horbaczewski (MBA 2008)** wants to be clear: He didn't invent the sport that pits one "quadcopter" pilot against another. When Horbaczewski watched his first drone race in 2015 behind a Home Depot on Long Island, the underground phenomenon had been going on for at least a few years, driven by message boards, social media, and enthusiastic amateurs. "It wasn't sophisticated, and the drones would sometimes drop out of the sky, but there were moments of magic that reminded me of *Star Wars* and the video games I played growing up," he says.







# Training Maneuvers

A professional sport is born

But it's a long way from amateur get-togethers to a TV-ready, professional sport. Backed by \$12 million in venture capital (a figure that has now grown to \$32 million), Horbaczewski and a team of engineers devoted a good chunk of 2015 and most of 2016 to developing a drone that could be piloted in real time through a complex, three-dimensional course of gates and obstacles. That meant creating a lightning-fast radio system and control uplinks that respond to pilots wearing first person view goggles. "You need to be able to see a wall, and react, before you hit it," he explains.

Because DRL provides broadcast-ready content to networks, it helps that Horbaczewski has a background in film production and special effects. "Filming something the size of a dinner plate that travels 90 miles an hour isn't easy," he says. "The technology has to be invisible to the viewer. It's really the case here that you don't get a second chance at a first impression."

—JULIA HANNA



London's Alexandra Palace, site of the 2017 Allianz World Championship of drone racing

## Fall 2016

Drone Racing League, ESPN, Sky Sports, and ProSieben-Sat.1 agree to broadcast the first season of five races. Venues include Miami's Hard Rock Stadium and an abandoned mall in Los Angeles.

## November 2016

DRL partners with Bud Light to find the next professional drone racer, recruited through DRL's online simulator and a live tournament.

## February 2017

DRL signs a multiyear title sponsorship with German insurer Allianz.

## June 2017

DRL announces more than \$20 million of Series B financing, led by Allianz, Sky, Liberty Media, Lux Capital, and World Wrestling Entertainment, in addition to partnerships with Swatch and FORTO Coffee Shots.

## July 2017

The hand-built DRL RacerX achieves a Guinness World Record for the "fastest ground speed by a battery-powered remote-controlled quadcopter," hitting 163.5 mph.

SYLLABI

# Pencils Up

Taking note of new courses

WHEN MBA STUDENTS RETURNED TO SOLDIERS FIELD in the fall, they had nine new second-year courses to choose from, four with an emphasis on fieldwork. For faculty, developing a course affords the opportunity to draw on research and address what they see as some of the business world's emerging demands on MBAs. Here's a closer look at three of this year's offerings. —JH

## Investing for Impact

Professor **Shawn Cole**, Finance, and Senior Lecturer **Vikram Gandhi**, General Management

A rapidly growing share of asset owners and managers are making investment choices targeting not just return, but also sustainability, values alignment, and impact, creating a market that has grown almost 25 percent since 2014; it now represents \$23 trillion in assets globally. "The potential to deploy capital to obtain financial returns while also doing good has attracted a tremendous amount of attention," Cole and Gandhi say. "We saw an opportunity to explore this rapidly evolving practice and develop new material that is both exciting for our students and relevant for practitioners."

## Leadership: Execution & Action Planning (LEAP)

Assistant Professor **Ryan Raffaelli** and Senior Lecturer **David Fubini**, Organizational Behavior

"We've thought deeply about creating a course that not only looks at different types of management challenges, but also suggests how to deal with those challenges based on your seniority in an organization," Raffaelli says. "What does it mean to lead a change effort when you're just a couple of years out of business school?" Management challenges include turn-arounds, transactions, global expansion, reinvention, scaling growth, and career management.

## Field Course: US Behavioral Insights

Professor **Max Bazerman**, Negotiation, Organizations & Markets

In addition to classroom sessions, students will work on-site with a nonprofit or government client in Boston, New York, or Washington, DC, to analyze a problem and develop recommendations based on behavioral decision research and economics—the idea that we can build behavioral "nudges" into the system that will result in better decisions and overall outcomes. Projects will include improving New York's system to match middle school students to their preferred school and prompting doctors to respond more effectively to the opioid crisis, among others.



### September 2017

DRL High Voltage, a drone pilot simulator, graduates from beta testing. The video game hones skills in preparation for flying an actual drone. DRL drones cost between \$500 and \$1,000; Nikko Air, a model drone produced in partnership with DRL and Toy State, retails for about \$170.

### Spring 2018

The 2018 season is unveiled, with races scheduled for broadcast by six networks across more than 87 countries.

Interest

TRAFFIC PATTERNS

# Diagnosing DC's Dysfunction

WASHINGTON ISN'T BROKEN. IT'S THRIVING. THE REAL problem is that our political system benefits the major political parties and their industry allies—not the people it was designed to serve. That's according to "Why Competition in the Politics Industry Is Failing America," a recent report out of the School's US Competitiveness Project from business leader Katherine Gehl and University Professor **Michael Porter**. Gehl and Porter use the lens of industry competition to analyze the US political system and propose a strategy for reform and innovation.

"The politics industry is different from virtually all other industries in the economy because the participants themselves control the rules of competition," write Gehl and Porter. "There is no truly independent regulation of politics that protects the public interest." The current two-party structure is a textbook duopoly, they add, surrounded by a "political industrial complex" of special interests, donors, and lobbyists, resulting in competition that fails to deliver what citi-

zens should expect: practical and effective policies that address the nation's problems; action on those policies; leadership that unites and inspires; and respect for the Constitution and rights of all citizens.

While this probably sounds familiar—and depressing—Gehl and Porter emphasize that it is entirely fixable. Their strategy for reforming the system encompasses a variety of actions to restructure the election process, from moving to a single primary ballot for all candidates to instituting nonpartisan redistricting. They also propose restructuring the governing process by aligning legislative and governance rules with the public interest; shifting the incentives for politicians to respond to constituents rather than donors; and opening up competition as early as the 2018 election cycle to centrist, solutions-oriented independent candidates, among other recommendations.

"We citizens bear the ultimate responsibility for knowing what is good for our society and insisting on change," the authors conclude. "We have the power to take it back, and we must." —JH

**+ONLINE**  
Read the full report at [hbs.edu/competitiveness](http://hbs.edu/competitiveness)

## @Soldiers Field

Last month, health care executives and clinicians gathered to **BRAINSTORM STRATEGIES FOR NAVIGATING PAYMENT REFORM** for providers, payers, and pharma. Speakers included HBS faculty **Leomore Dafny** and **Robert Huckman**, as well as Harvard Pilgrim Health Care Chief Medical Officer and SVP **Michael Sherman (MBA 1997)**.

The Rock Center welcomed **20 ENTREPRENEURS-IN-RESIDENCE** to serve as advisors to student entrepreneurs for the academic year. EIRs—who also work with faculty on course development—include sweet-riot founder and CEO **Sarah Endline (MBA 2001)**, Paddle8 cofounder **Aditya Julka (MBA 2009)**, and Pacific Lake Partners cofounder **Jim Southern (MBA 1983)**.

In late September, the HBS Association of Boston hosted a fireside chat with General Electric's **Jeff Immelt (MBA 1982)** and HBS professor emeritus **Ben Shapiro**. Immelt, GE's former CEO, discussed the company's role in creating the **INDUSTRIAL INTERNET OF THINGS** and the relocation of its headquarters to Boston.



Some 2,400 alumni and guests gathered on campus in October for **FALL REUNIONS**, which included presentations on the science of happier spending, leadership lessons from the musical *Hamilton*, and a live taping of the *Skydeck* podcast with author and entrepreneur **Diane Hession (MBA 1977)** concerning her qualitative research on the American electorate.

## TARGET PRACTICE

# The Name's the Thing

SO YOU HAVE AN IDEA FOR A NEW BUSINESS, PRODUCT, or service. What are you going to call it? As any cash-strapped entrepreneur, product manager, or “creative” will tell you, that decision can be critical when it comes to avoiding expensive legal fees defending against a trademark lawsuit, or spending money on a domain name or logo that turns out to be unusable.

As head of Master-McNeil, a Berkeley-based naming and branding agency behind names like Ariba, PayPal, Athlon, Affirm, and over 60 projects for Apple, **SB Master (MBA 1980)** has spent plenty of time in the trademark trenches. “The creative work is always challenging and fun, but I had become frustrated by how onerous, expensive, and slow it was to do a good job of checking the availability of new names and brands,” she says. “The whole process needed to be rethought.”

In 2014 she launched Naming Matters, employing an engineering team to create a web application that applies natural language processing, machine learning, big data, and data visualization algorithms to make conflicts with trademarked names immediately visual, accessible, and searchable. “We wanted to democratize this specialized, arcane sector, taking what we had learned about name selection and availability and making it accessible inexpensively to everyone, everywhere,” says Master.

Say you have a name in mind for a financial planning service firm. Type in your name and describe what you are naming. Algorithms instantly weight and compare your name to existing and pending trademarks, based on a variety of characteristics, including phonetic similarity, similarity of goods, and status of existing trademark applications and registrations: “We’re capturing the judgment equivalent of trademark counsel and branding experts to answer the questions, What’s the riskiness of this name choice? What is the chance someone out there is going to sue me if I use this name?” Master says. The result appears as an interactive dashboard-style graphic, with the proposed name at the bull’s-eye and identical and similar names displayed as points around it according to degree of threat—the closer to the center the prior names appear, the greater the risk of choosing your name.

Users can mouse over points of conflict to see the full trademark record, including its most recent sta-

tus in terms of activity, or use filters to further narrow search results. “If you only care about providing your service or marketing your product in the United States, you might decide to filter out other countries,” Master says. “With that said, any name that appears online is intrinsically international, so it doesn’t hurt to have a broader sense of what’s out there to avoid any unpleasant surprises.” Besides similarity of name, search results incorporate information on industry sectors and trademark classes.

“What trademark is about is the *likelihood* of confusion, so the system focuses on key classes for the user’s goods,” Master notes. People aren’t going to confuse a Ford Explorer with Microsoft’s Internet Explorer, for example, so it’s not necessary (or possible) to own one name across all classes. “On the other hand, if you see lots of use of an identical or similar name or word part in an unrelated class, this can offer some useful branding and market intelligence,” she says. “Sometimes there isn’t a trademark issue, but perhaps there are associations with another category of goods that could be worrisome, or just send the wrong message.” Other recently added features include a cross-search of social media handles and available URLs.

“Names have the ability to cross international boundaries, and the naming and branding sectors have ballooned over the past three decades,” says Master. “The power of a name has only grown over time, as has the risk of getting it wrong.”

—JH



# KNOW MORE.

WINTER/SPRING 2018 VIRTUAL PROGRAMMING

**REGISTER FOR UPCOMING  
HBS ALUMNI WEBINARS  
OR VIEW RECORDINGS AT  
[ALUMNI.HBS.EDU/VIRTUAL](http://ALUMNI.HBS.EDU/VIRTUAL)**

## POPULAR RECENT WEBINARS

**Pitching to Venture Capitalists? Learn from  
an Expert**

Ray Rothrock (MBA 1988), partner emeritus,  
Venrock

**Negotiating the Impossible: Break Deadlocks &  
Resolve Conflict (Without Money or Muscle)**

Deepak Malhotra, Eli Goldston Professor of Business  
Administration, Harvard Business School

**Blended: Using Disruptive Innovation to  
Improve Schools**

Michael B. Horn (MBA 2006), Chief Strategy Officer,  
Entangled Ventures

Heather Staker (MBA 2001), CEO and founder,  
Ready to Blend, LLC.

**Why Competition in the Politics Industry  
Is Failing America**

Katherine M. Gehl, American business leader,  
policy activist, and former CEO of Gehl Foods, Inc.

Michael E. Porter, University Professor, Harvard  
Business School

## JANUARY

**25 BECOMING EFFECTIVE CHANGE MAKERS:  
THE POWER OF NETWORKS**

Thursday, January 25 | 11:00 A.M. ET

Julie Battilana, Joseph C. Wilson Professor of Business  
Administration, Harvard Business School

## FEBRUARY

**13 MANAGING THE HIGH-INTENSITY  
WORKPLACE**

Tuesday, February 13, 2018 | 12:00 noon ET

Lakshmi Ramarajan, Anna Spangler Nelson and  
Thomas C. Nelson Associate Professor of Business  
Administration, Harvard Business School

## MARCH

**22 HOW TO PREPARE FOR AND TRANSITION  
BACK FROM A CAREER BREAK**

Thursday, March 22, 2018 | 12:00 noon ET

Carol Fishman Cohen (MBA 1985), CEO and cofounder,  
iRelaunch

## APRIL

**12 THE CHALLENGE OF NEGOTIATING INSIDE  
YOUR COMPANY**

Thursday, April 12, 2018 | 12:00 noon ET

Michael Wheeler, Retired Professor of Management  
Practice, Harvard Business School

**24 RETHINKING RETIREMENT**

Tuesday, April 24, 2018 | 12:00 noon ET

Lauren Murphy, Director, Career & Professional  
Development, Harvard Business School

Rich Schneider (MBA 1974), Partner, Sage Partners

*Additional programs to be announced.*

*Please check the website for dates and current information.*



IN MY HUMBLE OPINION

# Truth Teller

A 'turnaround king' tackles Marks & Spencer

CORPORATE TURNAROUNDS AREN'T KNOWN FOR BEING A WALK IN THE park. "Anybody who does what I do has to be incredibly resolute, to the point of bloody-minded, about the need to fracture an organization's comfort zone and challenge the usual way of doing things," says **Archie Norman (MBA 1979)**. "The genesis of any turnaround is facing into the unvarnished truth."

A somewhat unwilling veteran of doing "the hard things," Norman became chairman of 133-year-old British retailer Marks & Spencer in September. While it's impossible to generalize the process, he cites the importance of being open-minded, listening, and recognizing that turnarounds take time. "Instant change is no change," he says—though the process still requires operating with a sense of urgency. "This is not the last chance saloon, but the clock is ticking, and there are very hard yards ahead," he says of the iconic brand. "What's important to me is the satisfaction of seeing an organization that has been failing for years become a great place to work, from the shop floor all the way on up, and produce a great result for shareholders." —JH

**First job:** "Shifting muck" on a pig farm at 14 or 15. "You had to have a good bath when you got home."

**Morning routine:** None. "I

work in two or three different offices, and the nature of what I do is perpetually changing."

**Prime time:** "I'm not going to get into top gear be-

fore I've had a stiff cup of coffee. I really get going by about midmorning, and I'm firing on all cylinders in the evening—but that doesn't necessarily work for everyone else."

**Getaway:** A cottage in Yorkshire with springer spaniels and horses.

**Equine escape:** "If you're riding, you have to concentrate on the

horse, which is much bigger and stronger than you are. Then there's the adrenaline factor. If you're coming up to a big hedge, you're not thinking about what's going on in the office. You're wondering whether you're going to get to the other side."

**Successful turnarounds:** Five and counting: Kingfisher (retail), Asda (supermarkets), Energis (telecom), Coles Supermarkets in Australia, and the media company ITV.

**Unsuccessful:** The Conservative Party, where he served as an MP from 1996 to 2005. "While I was there, we became very good at losing elections, and politics in the UK is binary. Either you're in power or you're out of power, and if you're out of power you don't get to do very much."

**Number of work trips Down Under:** 62 and counting. "When you think about it—and it's probably best not to—I've spent about four months of my life on a plane to Australia."

**That nickname:** "I don't think I'm a 'turnaround king.' My problem is that for some reason nobody ever offered me a

normal job. Obviously, it would be much nicer to be the chairman or CEO of a high-performing business that floats gently upward. I do what I do because the river carries you in a certain direction."

**And there's an upside:** "If you get it right, you see much more dramatic change than you would in a steady-state type of business. It's exhilarating to see what's possible when people look into the abyss of failure and take it into their own hands to create real change."

**Industry intel:** "I think the script is written for retail. In both food and fashion, we're still far from the ceiling when it comes to the online and home delivery trend. That's a profit-eroding migration, and it doesn't mean you can't find ways to exploit that movement. But the industry overall is walking up a down escalator."

**Why Marks & Spencer:** "It's a terrific British brand with a lot of goodwill that has drifted over the past 15 years. But it has a new CEO who's very keen to grasp the nettles, and the board is fully faced into the issues. So here we go again."







# 3-Minute Briefing

## Wei Zhang (MBA 1999)

President, Alibaba Pictures

I joined Alibaba in 2008 as part of its strategic investments team. I never thought that one day we would have an entertainment group. But today, Amazon, Google, Apple, and Facebook are all in the entertainment space.

**ALIBABA PICTURES DOESN'T REPLICATE A TRADITIONAL HOLLYWOOD STUDIO.** We want to use the data and resources Alibaba has gathered in our e-commerce and internet ecosystem to create, market, and distribute content differently. But at the end of the day, everything starts with a good story.

We're here to help our Hollywood partners succeed in China, which is **THE SECOND-LARGEST FILM MARKET IN THE WORLD.** In China, the audience skews younger, and 80 to 90 percent of film revenue is from box office—in the United States, it's anywhere from 30 to 50 percent—so there are plenty of merchandising opportunities around great content in China.

**LAST YEAR, WE MADE AN INVESTMENT IN STEVEN SPIELBERG'S AMBLIN PARTNERS** and released *A Dog's Purpose* in China. It's very different from visual spectacles like the *Transformers* movies. But I saw a common value in the connection we feel with animals. People thought the most we could do was 30 to 50 million yuan; eventually we did 606 million yuan in box office.

**WORKING IN MEDIA WAS ALWAYS MY DREAM.** One summer I saw an advertisement recruiting for kids to host their own shows. I made it through the audition and discovered something that I hadn't even known I could do.

After HBS, I returned to China and moonlighted as a TV host for fun. I was working at Bain when I learned that News Corp was recruiting for shows in China. I said, "I'm going." It was a 50 percent pay cut. Everyone thought I was crazy, but I believe it's so important to follow your passion.

In this business, you can create something that will bring insight, inspiration, and happiness to people. When I first came to the United States in 1989, there was no email. And I was very, very homesick. **I REMEMBER CRYING WHEN I HEARD, "E.T. PHONE HOME."** I didn't know then that one day we would have a partnership with Steven's company. But I believe in karma. Somehow you end up in your place, you know?  
—JH

Interest

Zhang and the popular "Tao Doll" figurines that represent Alibaba's e-commerce platform.



## TURNING POINT

# The Dark Season

BY JONATHAN WILKINS (MBA 2007, MDIV 2009)

A FEW YEARS AGO I WENT THROUGH A SORT OF WILDERNESS experience, where nothing was lining up. I had to sell my car and move in with a roommate to cut costs. There was a moment of realizing, “I have two master’s degrees from Harvard, but I’m unemployed.” Yet every day I was leading a prayer conference call for hundreds of people from across the country. The feedback was that my words were extremely encouraging and helpful. So there’s a sense of envy in realizing God’s divine magic is working for others, but not for you.

About six months into unemployment, I was doing a lot of soul-searching and praying to figure out what I was truly trying to do, which was get into real estate and community development. Then my mother came to visit in Chicago and said she was praying for me. The next day, I connected with an HR rep who was a member of my church, which led to a position at Jones Lang LaSalle.

About a year later, the Chicago Bears were looking for a part-time team chaplain, and the head of player engagement called his pastor in Denver, who happened to be my former youth pastor. He recommended me, and I came in to teach a lesson to the team’s rookies called “The Desire Within.” It was drawn from that dark season I lived through and centered on this question: What does it mean to have a desire for something beyond what we can see and touch? I had tasted what it was like to be on the edge of impoverishment. But I eventually found my way. By the time I was done, some of the players—who had also faced adversity—were in tears. Two months later I was named team chaplain.

The NFL is all about production and productiv-

ity. When things go well, everyone in the world can see it. When things don’t go so well, the same is true. Last year, the Bears were 3 and 13. I’ve never talked so much about anxiety and adversity in my life. Our weekly meetings are optional, but we usually get about 45 players from a 53-man roster. In some ways it’s similar to an HBS case discussion in terms of how it’s structured—I open with a prayer, pose a discussion question, and write responses on the board, shaping the conversation around what comes up. It’s a trusted space to talk about life and spiritual principles while engaging with each other as a team—building unity, being transparent, and applying scripture to everyday life. What I offer is a source of peace and recognition that we don’t have all the answers all the time, but that an answer *will* come—not from our circumstance, but from within us, through a higher power. The dance, if you will, is to know when you’ve come to the end of yourself, and when you need to have faith for the things that are literally out of your control. To have the ear of the team in this way is humbling and inspiring.

There are some things that only trials and tribulations produce. When you suffer and have to draw from the depth of your personal resources to overcome adversity, it gives you the language of compassion—the ability to relate to others who are suffering or who have suffered. So while I wouldn’t wish what I went through on anyone, I wouldn’t give it back, either.

*Chicago Bears Team Chaplain Jonathan Wilkins also serves as a motivational speaker for sports and corporate teams.*

**+SKYDECK**  
Wilkins describes what it’s like to lead football players in prayer and how he recharges his spiritual batteries at [alumni.hbs.edu/skydeck](http://alumni.hbs.edu/skydeck)

# IMPACT

## INVESTING IN GLOBAL UNDERSTANDING



THE HARVARD BUSINESS SCHOOL CAMPAIGN  
THE HARVARD CAMPAIGN

## DEVELOPING INSIGHTFUL GLOBAL LEADERS

**H**BS is committed to developing future leaders equipped with the cultural intelligence and skills required to operate in today's globalized world. Key to this effort is creating opportunities for members of the School's increasingly multicultural community to develop insight into global business practices and share knowledge with ever-widening audiences, in the process striving to address society's greatest opportunities and challenges. Alumni and friends from around the world provide the financial support and guidance that help fuel HBS's international strategy.

Innovative approaches to deepening global engagement at the School this year include a student-led admissions event in Mongolia, field work in Helsinki for first-year MBA students, and a faculty immersion to Southeast Asia. In January, the School will introduce a field course for second-year MBA students focused on startups and venture capital in Israel, and in August will add China to its portfolio of new function-driven Senior Executive Leadership Programs.

The global centers and offices established by HBS around the world over the past 20 years are the nexus for the School's international research and activities. They serve as embassies, enabling pathbreaking research (approximately half of all HBS cases produced today are globally oriented), facilitating

immersions for students and faculty members, and assisting with admissions and career development outreach, among other activities. This network of centers and offices also strengthens the School's relationships with local alumni and other leaders in business, government, and academia.

HBS shares its pedagogy with learners around the world. HBX, the School's digital education platform, has enrolled more than 23,000 participants from Azerbaijan to Zambia since 2014 and it continues to broaden the School's impact. Harvard Business Publishing (HBP) represents yet another vehicle for disseminating HBS's thought leadership through its publications and course materials; last year, HBP sold more than 10 million case studies globally, and it now offers 12 international editions of *Harvard Business Review*.

What drives HBS's international agenda is a recognition of the need for faculty members and students to understand firsthand important business phenomena, wherever they occur. What sustains the School's efforts in this area is the dedication of alumni and friends who support internationalization, including through giving to the HBS Fund for Leadership and Innovation; these individuals are helping members of the HBS community acquire the global perspective necessary to be effective and insightful leaders.



**“The global research centers are critical to helping HBS faculty develop the understanding and insight they need to prepare students for leadership around the world.”**

Lynn Paine, John G. McLean Professor of Business Administration and Senior Associate Dean for International Development

*On the cover: First-year MBA students in Cape Town, South Africa, on their FIELD Global Immersion in May 2017.*

COVER: BARBARA TRISSEL; LEFT: STUART CAHILL



# HBS Global Highlights

## REGIONAL CENTERS & OFFICES

# 14

**Africa**  
○ Johannesburg

**Asia-Pacific**  
★ Hong Kong  
★ Shanghai  
○ Singapore

**California**  
★ Silicon Valley

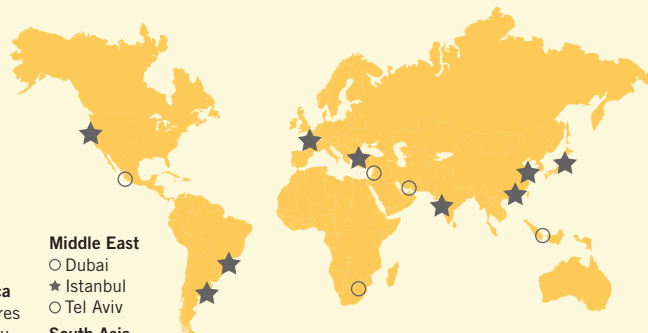
**Europe**  
★ Paris

**Japan**  
★ Tokyo

**Latin America**  
★ Buenos Aires  
○ Mexico City  
★ São Paulo

**Middle East**  
○ Dubai  
★ Istanbul  
○ Tel Aviv

**South Asia**  
★ Mumbai



★ Regional Centers ○ Regional Offices

## RESEARCH (FY17)

New Field Cases

# 261



Global Cases

# 48%



## MBA FIELD 2 GLOBAL IMMERSIONS (2017)

Partner Organizations  
that Hosted Student Teams

# 149

First-Year MBA Student  
Participants

# 933

Locations around  
the Globe

# 16

## EXECUTIVE EDUCATION PROGRAMS (FY17)

Business Leaders Attending Programs on Campus  
and in HBS Classrooms in Other Countries

# 11,000+

International Participants

# 66%

Representing **130 Countries**

## ALUMNI

83,000 Alumni Living in

# 168

 COUNTRIES

105 Clubs and Associations in

# 49

 COUNTRIES

## HBX (2014–2017)

Participants in All HBX Programs

# 23,000

International Participants

# 44%

Representing **140 Countries**



**LEARN MORE**

Visit [www.hbs.edu/global](http://www.hbs.edu/global)

# GLOBAL PERSPECTIVES

## Understanding Southeast Asia's New Business Frontier

From cosmopolitan Bangkok and Singapore to the Sumatran rainforest, participants in the June 2017 HBS faculty immersion explored the diverse industries of Southeast Asia. "This region is something of a new frontier for many of us," says **Willy Shih**, Robert and Jane Cizik Professor of Management Practice, who cochaired the one-week immersion with **Dennis Campbell**, Dwight P. Robinson Jr. Professor of Business Administration. "We started with a very basic question: 'What should we really know about Southeast Asia?'"

Emerging markets provide critical links in many global supply chains, particularly on the upstream supply end, so the group of 12 HBS faculty members and a colleague from the Harvard John A. Paulson School of Engineering and Applied Sciences visited companies that deal in sugar and bioenergy, rice, palm oil, tuna, paper, and data storage components. They also examined the gemstone and jewelry trade in Thailand, which produces 80 percent of the world's jewelry, from high-end to mass-market, and met with villagers in Sumatra to discuss efforts to effect change in agricultural practices, such as reforestation. Fittingly, the group toured the PSA Singapore terminal, the world's largest container transshipment hub.

The immersion culminated in a symposium in Singapore attended by local alumni and other business leaders. Several faculty members discussed their current research and, during panel discussions, addressed trade, globalization, innovation, and entrepreneurship.

Following the immersion, Shih reflected on key learnings from the experience, which HBS's Division of Research and Faculty Development and the Global Initiative's Asia-Pacific Research Center's Singapore office helped to coordinate: "It's striking how knowledgeable and proactive the firms we visited were about sustainability; some of them are far ahead of firms in the developed world. They understand that it's essential to their long-term survival." Similarly, the group was impressed by regional investments in infrastructure.

"In Sumatra, for example, the firm we visited was building roads and schools, because it's in their interest to be able to get their products to market and have a qualified workforce," he says.

Shih was equally enthusiastic about the exchange of ideas among faculty members across disciplines, noting the dynamic discussions that took place on topics ranging from supply chain management to social enterprises. Opportunities for faculty members to take a deep dive into the cultural, economic, political, and social forces shaping business in a region are invaluable, adds Shih, and often lead to case studies and global insight that enhance their conversations with students both in and outside the classroom.



**"It's striking how knowledgeable and proactive the firms we visited were about sustainability; some of them are far ahead of firms in the developed world."**

Willy Shih, Robert and Jane Cizik Professor of Management Practice

☑ ABOVE: NATALIE KEYSAR; RIGHT: JOHN MACOMBER



**THE HARVARD BUSINESS SCHOOL CAMPAIGN**  
**THE HARVARD CAMPAIGN**

[campaign.hbs.edu](http://campaign.hbs.edu)



## Funding Infrastructure: Lessons from Africa

Those interested in understanding how to successfully build complicated infrastructure projects can gain insight by studying the world's second-largest continent: Africa. "Policymakers, investors, and builders can learn from the African experience, where public-private partnerships and deployments of technologies are illuminating new ways to approach the task of funding infrastructure despite a scarcity of government funds," says Senior Lecturer **John Macomber**.

Macomber, who spent three decades in the real estate and construction business prior to joining HBS in 2007, is committed to making real progress on some of the problems that face African nations. He designed an Immersive Field Course (IFC) focused on opportunities for private financing of public infrastructure projects in Africa. An important element of the course, he says, was to have students spend significant time working side by side with the local population. "Get out and look with your own eyes," he instructed the 40 second-year MBA students who traveled to Addis Ababa, Ethiopia, and Dar es Salaam, Tanzania, in January 2017.

Students enrolled in Africa: Building Cities divided into eight teams based on their interests and explored ideas for attracting private investment over the next decade in areas such as renewable and hydrocarbon power generation, sanitation, and telecommunications.

"We had access to high-level people," says **Sterling Cross (MBA 2017)**, who worked with a team on inner-city transportation. "They were willing to get their hands dirty with us and really listened to our ideas. It was a true immersion and a phenomenal experience." At the end of the course, students posted reports on a web-based platform that can be used by their local partners and by future groups of HBS students who will address similar issues in the region.

"The people we work with in-country are deep experts in their fields, and our students bring work experience, academic training, and optimism to the challenges," reports Macomber. Having written several case studies and drawing on the School's Senior Executive Program—Africa, Macomber hopes, through his research, the students' work, and collaboration with the School's new research office in Johannesburg, to offer business solutions to some of the continent's most difficult problems. The IFC will be offered for the third time this coming January.

*Left: MBA students and project developer Sam Alemayehu (orange vest) tour the Reppie Waste-to-Energy project under construction near Addis Ababa, Ethiopia—the first of its kind in Africa.*

# HBS FUND ADVANCES GLOBAL STRATEGY

Recognizing that the best ideas can come from anywhere and that examples of great leadership and management practice exist everywhere, HBS is extending its intellectual reach to understand these new ideas and approaches and to disseminate them through its educational programs and Harvard Business Publishing.

Gifts of all sizes to the HBS Fund for Leadership and Innovation help fuel the School's ambitious international strategy to expand the scope of faculty research, develop students' global intelligence, engage alumni, and influence business practice worldwide.



**HBS FUND**  
FOR LEADERSHIP & INNOVATION



GLOBAL UNDERSTANDING

To direct your HBS Fund gift to international research and learning opportunities, look for the "Global Understanding" option on the giving form found at [give.hbs.edu](http://give.hbs.edu).

## The 2016–2017 Contributors Report is out!

Read inspiring stories of alumni making an impact on a range of issues by giving to HBS. Also see annual and reunion giving by degree and class year.

Visit [alumni.hbs.edu/CR16-17](http://alumni.hbs.edu/CR16-17) (HBS login required).



## ALUMNI SALUTE BILL SAHLMAN

As a faculty member for more than 35 years, **Bill Sahlman** has created a culture of entrepreneurship that has powerfully influenced the School, its students and alumni, and society at large. Following Sahlman's retirement in June 2017 (he remains on the faculty as a Baker Foundation Professor), and as a tribute to his many contributions, a group of alumni have launched the William A. Sahlman Fund for Entrepreneurship—an endowment that will support the teaching, study, and cultivation of entrepreneurship at HBS and Harvard.

"Bill's impact as a teacher, mentor, case writer, advisor, and friend is hard to exaggerate," says **Doug Mackenzie (MBA 1989)**, as he and **Andy Paul (MBA 1983)** reached out to alumni to inform them of the new fund. "Early support has been extraordinary," adds Paul. "It's a true testament to the role that Bill has played in so many lives as well as to the collective interest in and enthusiasm for entrepreneurship among the School's alumni and friends."

Sahlman arrived at Soldiers Field in 1973, earned his MBA in 1975, and received his PhD in business economics in 1982. He then joined the faculty full-time. Sahlman's impact includes developing the School's Entrepreneurial Finance elective (which more than 8,000 students have taken), helping to build the Entrepreneurial Management unit, launching the California Research Center and the New Venture Competition, and creating an HBX entrepreneurship course.

If you would like to learn more about the fund, contact Jon Schaffrath at HBS: [jschaffrath@hbs.edu](mailto:jschaffrath@hbs.edu), 617-384-8060.

**"Bill's impact as a teacher, mentor, case writer, advisor, and friend is hard to exaggerate."**

Doug Mackenzie (MBA 1989)

ABOVE: NEAL HAMBERG



THE HARVARD BUSINESS SCHOOL CAMPAIGN  
THE HARVARD CAMPAIGN

[campaign.hbs.edu](http://campaign.hbs.edu)



# ALUMNI CONNECTIONS



1 CHICAGO



2 BOSTON



3 TOKYO



4 MINNESOTA



5 BOSTON



6 BOSTON

## Recent HBS Alumni Events on Campus and Beyond

- 1 Members of the Classes of 2003 to 2017 gathered for a Young Alumni Reception at Joy District Chicago in September.
- 2 The MBA Classes of 1972, 1977, 1982, 1987, and 1992, as well as alumni from several Executive Education programs, celebrated their reunions on campus in October.
- 3 Tokyo was one of 67 locations where clubs and alumni groups enjoyed an evening of networking and socializing in conjunction with the annual HBS Global Networking Night held on October 18.
- 4 **Jay and Page Cowles (both MBA 1983)**, center, hosted seven MBA 2018 students in their St. Paul, Minnesota, home in August as part of the HBS Summer Alumni Dinner Series.

Several hundred alumni and students attended *A Conversation with Jeff Immelt (MBA 1982)* on campus in September, cohosted by the HBS Association of Boston.

- 5 Attendees enjoyed the opportunity to ask a range of questions.
- 6 **Jeff Immelt**, then-chairman of General Electric, and Professor Emeritus **Ben Shapiro** on stage in Burden Hall.

To learn about upcoming events, please visit [alumni.hbs.edu/events](http://alumni.hbs.edu/events).



# OUR MISSION IS TO HELP NONPROFITS FULFILL THEIRS.

To deepen your impact as a nonprofit leader, return to your roots at Harvard Business School. Our social enterprise programs integrate strong managerial disciplines with innovative business practices and a mission-driven mindset. Get equipped to drive change at all levels, maximize your contribution to nonprofit boards, and optimize performance across your organization.

*HBS alumni receive an exclusive 30% discount on program fees.*

**Performance Measurement for Effective  
Management of Nonprofit Organizations**

29 MAY–01 JUN 2018

**Strategic Perspectives in  
Nonprofit Management**

15–21 JUL 2018

**Governing for  
Nonprofit Excellence**

SEP 2018



**HARVARD  
BUSINESS SCHOOL**

Executive Education

**Learn more** [www.exed.hbs.edu/hbsb-sei](http://www.exed.hbs.edu/hbsb-sei) →

# Ideas



INNOVATION

## Character Building

Why storytelling is the key to virtual reality's future

Page 27

# CONNECT ANYTIME, ANYWHERE HBS MOBILE

Use the new Alumni App to keep in touch with friends, make new contacts, find and register for events, and more.



## Featuring easy, personalized links to:

- **My Directory:** Quickly connect to your network or find alumni near you
- **My Events:** Your personal program picks, plus see who else will be there!
- **My Class Notes:** See what your classmates have been up to lately
- **Alumni News:** Get the latest updates on classmates, the School, and more
- **Alumni Bulletin:** Catch up on your reading!



**HBS Mobile**  
The Alumni App





# The Future of VR Is Animated Bunnies

Content—not tech—is what virtual reality needs now

WITH THE PROMISE OF MIND-BOGGLING, out-of-body experiences, virtual reality is hyperbolic by design. And the excitement extends to industry forecasts: According to the research firm SuperData, the sector, driven by early adopters, is on track to make \$3.7 billion in revenue this year, and the firm estimates it could swell to more than \$28 billion by 2020.

But **Maureen Fan (MBA 2009)** has a reality check for the industry. For VR to go mainstream, she says, “we need people to be thinking about storytelling.” Future success depends less on further technological advances and more on content creation.

To address that need, Fan cofounded Baobab Studios with Eric Darnell, a former DreamWorks Animation exec who was the screenwriter and direc-

tor for all four *Madagascar* films. Baobab creates interactive, animated VR worlds that feel less like games—in many early VR experiences, users engage with characters only to win something—and more like movies. For Fan, animated VR is the entertainment trifecta: “the empathy of film, the agency of games, and the motivation of real life.”

In Baobab’s first short film, *Invasion!*, released in 2016, actor Ethan Hawke narrates a scene in which a frightened white rabbit named Chloe tangles with a pair of bumbling alien invaders, Mac and Cheze. Unlike a typical film, the virtual reality experience—downloaded as an app to a VR headset—is more like a Choose Your Own Adventure book. Users’ decisions shape the storyline, while their interactions with the characters do something even more remarkable: create an emotional connection between the real and the imaginary.

In Baobab Studios’ VR film *Invasion!*, viewers interact with Chloe, a scared white rabbit that responds to their actions.



# CONNECT WITH A CAREER COACH TODAY

NEGOTIATING AN  
OFFER  
—  
MANAGING A CAREER  
CHANGE  
—  
MOVING TO A NEW  
LOCATION  
—  
REENTERING THE  
WORKFORCE

Did you know you have access to up to **four complimentary career coach appointments** each year as an HBS alumnus? Career Coaches are experienced business professionals committed to help alumni realize their unique career visions. They are trained to assist alumni with all aspects of the career development process.

Visit [alumni.hbs.edu/careers](https://alumni.hbs.edu/careers) to learn more.



HARVARD | BUSINESS | SCHOOL

Career & Professional Development

*Asteroids!*, a sequel to *Invasion!*, was also a virtual reality hit.



Research has found that as humans form emotional bonds, they subconsciously begin to mirror one another: just watch a couple on a good first date as they mimic each other's motions. Baobab's characters do the same thing, imitating the facial expressions and other motions of the viewers. As they explore the virtual world of *Invasion!*, for instance, wide-eyed Chloe tilts her bunny ears to mimic the users' curious gazes. The result is an emotional engagement unlike any other available in entertainment, Fan says. "We want to create these characters that you fall in love with and transport you to these fantastic worlds." That is the real promise of VR, she says.

That may sound like more hyperbole, but Baobab's approach has gotten notice as *Invasion!* surpassed the 1 million download mark. The short also won a Daytime Emmy for outstanding interactive film and was optioned as a full-length animated movie. (The movie will *not* involve VR, a testament to the studio's focus on storytelling, says Fan.) The studio's follow-up, *Asteroids!*, which revisits *Invasion!*'s alien cast, drew critical acclaim. And musician John Legend has signed on as executive producer of Baobab's newest release, *Rainbow Crow*, a series retelling the Native American folktale.

Baobab's emphasis on creating compelling virtual reality content is an obvious win for the makers of headsets; VR technology producers Samsung and HTC were early investors in the studio. And the entertainment industry is looking to virtual reality as the future of film. Baobab has raised more than \$31 million from the likes of Twentieth Century Fox, Creative Artists Agency's Evolution Media Partners, and China's state-sponsored Shanghai Media Group.

Hollywood's commitment to VR storytelling will eventually usher the technology into the mainstream, Fan says. "It was never a question that VR was going to come, it is a question of when. Tech adoption takes longer than everyone anticipates." But when tech and content come together, she says, "the impact is greater than what anyone expects."

—JANELLE NANOS

RESEARCH  
BRIEF

## Developing High-Tech Talent

HOW SHOULD EMPLOYERS AND WORKERS ADAPT TO THE new demands in today's technologically driven workforce? Two recent reports by HBS professor **Joseph Fuller** examine innovative paths to training and building talent pipelines.

The first report offers a road map to expanding apprenticeship programs in the United States. Fuller collaborated with labor market analytics firm Burning Glass Technologies—led by CEO **Matt Sigelman (MBA 1999)**—to identify occupations best suited for the apprenticeship model. One criterion: The occupation must require narrow and clearly defined skills that can be obtained through specialized training, such as carpenters, electricians, and pharmacy technicians. In today's tech-heavy work environments, however, apprenticeships should not be limited to these trade occupations, Fuller argues, noting that apprenticeships are emerging in high-tech and service-sector occupations, such as computer support specialists, insurance underwriters, and customer service representatives. Fuller also contends that American companies should consider learning from their European counterparts, which provide apprenticeships in entry-level white-collar jobs as well as skilled trades. "Many of these jobs are in high demand," says Fuller, "which means that apprenticeships play a critical role in training workers for the jobs of the future and providing businesses with a ready-made talent pipeline."

The second report explores the increase in academic degree inflation in hiring practices—which Fuller defines as employers' tendency to raise the degree requirements for job applications. More than 60 percent of companies in the study's survey admitted to using college degrees as a baseline for hiring, both to reduce application pools to a manageable size and as evidence of professional skills, says Fuller. The problem with this approach, he explains, is that "you are excluding traditionally disadvantaged populations, you are excluding minority populations, and you will often be excluding a 55-year-old with lots of relevant experience but no college degree." There's an enormous financial cost, too, with over 50 percent of the companies surveyed paying college graduates more than non-college graduates for the same job. The takeaway message: stop raising degree requirements for jobs that don't absolutely require one. "You are playing in a more competitive market for those applicants. You are going to pay more, they will leave more often, and for many of these jobs, there's no data [showing that] you actually get a performance difference," says Fuller.

—DAN MORRELL





# Human Intelligence

Deciphering the science from the fiction in the burgeoning AI sector

**A**RTIFICIAL INTELLIGENCE IS NOT A REPLACEMENT FOR THE HUMAN BRAIN. AT least not yet. “That is decades away,” says **Rudina Seseri (MBA 2005)**, answering one of the most common questions she hears. As cofounder and managing partner of AI early-stage venture capital firm Glasswing Ventures, Seseri is more focused on today’s “narrow” artificial intelligence: technology capable of mimicking human thought processes and learning when applied to a specific task.

“If you go department by department in any given business, I’m hard-pressed to find an area where narrow AI is not having an impact,” says Seseri, which raises questions for business leaders in all sectors.

—APRIL WHITE

ASK THE EXPERT

## How can e-commerce businesses benefit from artificial intelligence in the near future? And how will potential customers react to the services provided by AI?

—Birce Koca (PLDA 15, 2013)

E-COMMERCE—AND RETAIL, MORE BROADLY—IS ONE of the areas that will benefit the most from AI. It will enable retailers to provide much better experiences to consumers. For instance, AI will be able to predict what I will like in a way that is much richer than current recommendation algorithms. So much richer, in fact, that my engagement with a particular brand might be very different than yours, because it’s customized to each of us. I can also imagine this predictive learning being combined with new user experiences, such as augmented reality or virtual reality, to create an immersive shopping experience in your home or in a brick-and-mortar store.

Some customers are set in the way they shop. Will they appreciate these changes? Who knows? But the next generation will be AI natives—the way millennials are digital natives—and they will grow up with AI retail experiences, and they will expect that richness.

## Outside the benefits of cost reduction, do you see opportunities within the next two to three years for AI to lead in areas of revenue generation?

—Jeremy Valeda (PLDA 15, 2013)

IT’S TEMPTING TO THINK OF ARTIFICIAL INTELLIGENCE as a cost-saver because there’s so much talk

around automation, but I would encourage people to pause and reconsider that. It’s actually much more about growing the business. I think of AI as, first and foremost, increasing productivity and driving revenue. For example, Glasswing Ventures has invested in a company called Talla, which leverages AI to resolve low-level IT issues without the need for human support. That doesn’t immediately reduce costs for IT services, but it does drive employee productivity. And if you think about AI-enhanced sales or marketing technology, it’s all driving revenue.

## Do you side with Elon Musk (AI has potential for great danger) or Mark Zuckerberg (the danger hype is overblown)?

—Francis Tapon (MBA 1997)

WE’RE NOT WORRYING ABOUT THE NEXT FIVE YEARS and narrow AI here. We’re talking about the more distant future and general AI, defined as machines handling tasks with (super)human performance levels across domains. Yes, artificial intelligence is a technology layer that will have meaningful ramifications, so we must be incredibly thoughtful about the standards we establish to govern it. There is a need for regulation—in that regard I lean toward Elon Musk’s position—but there are also amazing opportunities, a viewpoint that is closer to Mark Zuckerberg’s thinking. But I’d like to see people who are interested in these big questions look beyond the media buzz. Don’t listen to Elon Musk or Mark Zuckerberg or even me. Instead, read philosopher Nick Bostrom’s *Superintelligence: Paths, Dangers, Strategies* to better understand the issues.

**+ONLINE**  
Will AI completely automate certain jobs? Seseri weighs in at [alumni.hbs.edu/artificialintelligence](http://alumni.hbs.edu/artificialintelligence)

## The Business Case (Or Not) for Sustainability

Business & Environment Initiative professors Rebecca Henderson and Mike Toffel debate the responsibility and capability of businesses to address climate change and other environmental risks

### Is there a business case to be made for companies to act in environmentally friendly ways?

**Rebecca Henderson:** If one can imagine that all business in the entire world was run by one person, it'd be pretty straightforward to make a business case for acting against, for instance, climate change, ocean acidification, or depleting the topsoil, because business as a whole is going to suffer from the results of environmental degradation. There is a very strong collective case for business action, but from a show-me-the-money perspective, it depends enormously on the industry you're in.

#### THE EXCHANGE

**Mike Toffel:** And there's a real limitation to thinking that win-win opportunities that provide both financial and environmental gains will get us where we need to go. In some domains—especially where the cause and result of the problem are very proximate in both space and time—it might. If I cause a problem that harms you, my neighbor, now, we might find a way to negotiate so that I don't harm you as much, and I'd compensate you for the harm I've done. But our biggest environmental challenge these days is climate change, which is a global problem whose impacts are felt far afield and not immediately. In that context, it's much harder to find lots of win-wins.

### Are we seeing companies embrace responsibility for addressing environmental issues?

**MT:** I've recently been looking at companies in the United States whose CEOs are stepping into contentious discussions on policy issues. If you look at the topics that they've been choosing, it's been marriage equality, race relations, a whole host of social issues—but hardly anything on climate change. There are a few speaking out on the topic,

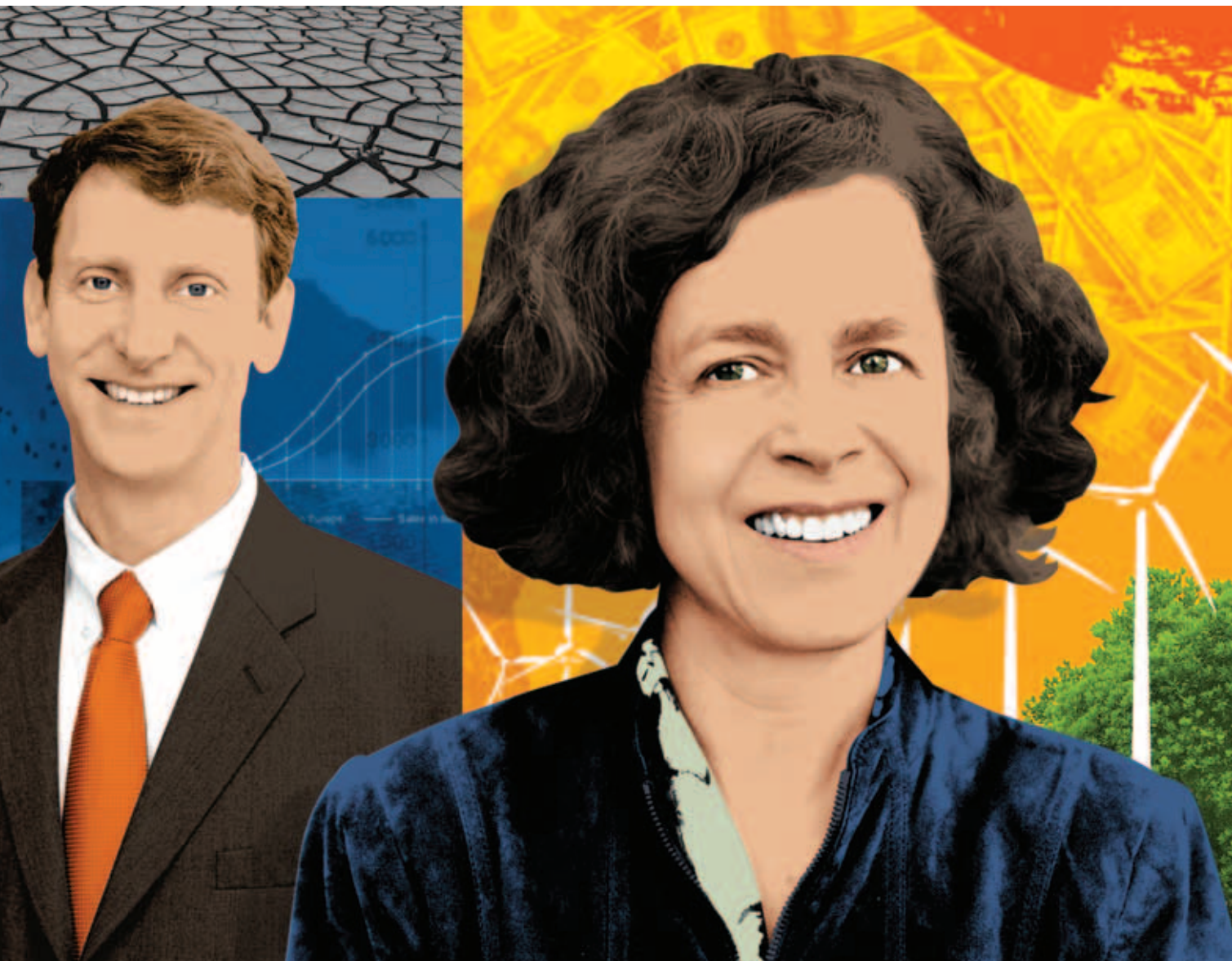
but I'm waiting for companies beyond the Ben & Jerry's of the world to make noise about the dire need for US federal policy to address climate change.

**RH:** When you look at Europe, you see many companies agitating for some kind of carbon regulation and beginning to shift their business models in this direction. If you expect your company to be around for the next 50 to 100 years, you're becoming increasingly aware that the viability of your business depends on dealing with climate change issues. But in the United States it can be politically risky for a CEO of a major company to take a public position on climate change that could alienate an important fraction of the political establishment.

### If government isn't addressing these issues, can companies take a leadership role?

**MT:** A lot of companies are trying to figure out what they can do in the absence of regulation. Companies like Microsoft have gone on record claiming to be carbon neutral organizations, because they're buying offsets such as investing in reforestation projects to counteract the carbon that's released from the energy that heats, cools, and electrifies their buildings. But what everyone needs to remember is that's hardly sufficient. And I worry that companies that dedicate their efforts to these types of initiatives feel as if they're "done." It's like someone who thinks climate





change is a real problem and buys a Prius and feels as if they've done their part and they're done. The problem is not solved if everyone buys a Prius—it's much bigger than that. For example, we have to move away from fossil fuels for transportation, heating, and generating electricity.

**RH:** But small things can increase awareness of the issues and make it increasingly less legitimate not to pay attention. I would be a big fan of every company in the country announcing that they were going to offset not because it would solve the problem, but because if every company did that, there would be a lot of money going into building a carbon-free energy system, and that would make a real difference at scale. So I think there is a way in which these individual actions could potentially snowball and lead up to something.

**What will the tipping point be for businesses and big environmental issues such as climate change?**

**RH:** I happen to be married to a political scientist, and so I ask him this all the time: "When will we tip? When will we realize that it's the greatest moral challenge facing our generation, and that we're burning down the house and we have to stop? When is it going to happen?" And he looks at me and says, "You know, change is really slow until it's fast."

One of the things I do with businesspeople is a very simple scenario analysis: "What are the odds that there'll be no carbon regulation? What are the odds that customers will never care?" And as soon as I start asking those questions they realize that the world is going to shift, and it might shift in the next 10 years. With that perspective, the business case for addressing climate change gets much, much stronger.

## The Doctor Deficit

Can the “Airbnb for health care” bring efficiency to the \$15 billion temporary medical staffing market?



HERE IS A DOCTOR SHORTAGE IN THE United States, according to the Association of American Medical Colleges, which predicts that the deficit could increase to more than 90,000 doctors by 2025. Meanwhile, the Bureau of Labor Statistics reports that today’s nurse shortage could reach 1.2 million vacancies in the same time frame.

**Alexi Nazem (MBA 2011)** has seen the impact of these shortages firsthand. “Health care is a very broken system,” says the doctor and cofounder of Nomad Health, an online marketplace for health care institutions seeking temporary staffing. Finding talent is an enormous source of expense and inefficiency in the industry, adds Nazem, who estimates that “nearly 100 percent” of health care institutions will need temporary staff this year.

The idea isn’t new. Temporary medical staffing is a \$15 billion market, and small, regional employment agencies have existed in the space for decades. But Nomad’s digital marketplace is an innovation, allowing clinicians to advertise their availability and health care institutions to advertise their needs. Once a match is made and the salary is negotiated between the employer and employee, Nomad manages the process, from background checks to malpractice insurance to payroll. It charges health care institutions a 15 percent commission for each hire—a transparency unheard of in a sector in which the employment agency typically serves as an opaque broker between institution and doctor.

Less than two years after launching its first marketplace, Nomad Health is working with 20,000 clinicians and 600 health care facilities in 12 states. —AW

### The Question:

NOMAD HEALTH’S LONG-TERM GOAL IS TO WORK IN ALL 50 STATES — BUT HOW QUICKLY should it expand? Because Nomad is creating a two-sided marketplace, it must achieve a critical mass of both employers and employees in each market to be successful, an endeavor that takes time and resources. Focusing on a small number of states would allow the company to prove the value of its model before thinking nationally. But two-sided marketplaces are often “winner take all,” and Nomad is not alone in pursuing a technological fix to health care staffing; delaying expansion risks ceding ground to new competitors. Which path should the company take?

#### GOT A CASE?

To take part in a future “Case Study,” send an outline of your company’s challenge to [bulletin@hbs.edu](mailto:bulletin@hbs.edu)

# The Answers:

CASE  
STUDY

HAVING BUILT THREE SUCCESSFUL TWO-SIDED MARKETPLACES (and one failure) I understand the dilemma. The answer depends on where revenue comes from, how your buyers and sellers are structured (regional, national, or stand-alone), and how strong the network effects are. In this case, staffing doesn't have as much network effect as collectible markets like eBay, and a staffing business should be cash-flow positive quickly in a given market, so focus on building critical mass dynamics in the top 25 health care markets.

—Paul Sims (MBA 2002)

MUCH TO MY SURPRISE, LYFT'S SUCCESS PROVES THAT often it is two or three winners take all. Why couldn't doctors and nurses list their availability on more than one platform and accept the best offer? That said, there's less risk in moving quickly than there is in moving slowly. The key business challenge isn't in contemplating a careful choice between fast and slow, it's in figuring out how to execute an expansion that's as rapid as possible. Step on the gas!

—Randy Shayler (MBA 2012)

IRON OUT THE MODEL FIRST, THEN ROLL IT OUT. BUILD national demand and reputation by executing flawlessly locally—solve a complex and broad problem well enough, and your reputation will precede you and pave the road into your expansion markets. That said, “marketplace” models only support so many players, so start in the two to three markets that represent a disproportionate amount of the demand.

—Andrew Goldberg (MBA 1999)

CREEP, CRAWL, WALK, RUN. DO IT IN THE TOP FIVE states, then expand as you learn more. Eighty percent of what you're doing today will change as you evolve. Don't give the doctors and hospitals a suboptimal experience on their first try with your service. Don't let the VC hype force you to expand faster than you should. (I say this as a health care VC.)

—John Lonergan (MBA 1976)

GIVEN THE FRAGMENTED NATURE OF THE MARKET FOR medical services there is almost no risk of being swept by “winner takes all.” Every regional market will have to be sold individually, so there is ample time to build up the business. The real challenge will be getting sufficient supply and demand in a limited number of markets to prove the concept while preserving and establishing satisfactory cash flow.

—Roger Strang (DBA 1977)

EXPAND AS RAPIDLY AS POSSIBLE WITHIN ANY CONSTRAINTS OF CAPITAL. There are probably very few barriers to entry in creating such a marketplace. This is a situ-

ation where the buyers are not mobile, and the sellers can be highly mobile, although subject to licensure by states. Therefore, you want a national (or international) pool of sellers, and you want it to be as large as possible as soon as possible.

—Roger Cole (MBA 1985)

WHILE THIS IS AN ONLINE PLATFORM, SIGNIFICANT MANPOWER still needs to be put in place to convince hospitals and clinics to sign up and then to follow up with them to ensure a good user experience. The reason why this space was filled with regional agencies is because it is still a market where local demand needs to be met with local supply. I would stay focused and develop a solid business model with value-added services. It's difficult to have exclusivity for this type of marketplace, so retention is key.

—Yishan Cao (MBA 2007)

## CASE STUDY UPDATE

### QE Solar

THREE YEARS AGO, QE SOLAR FOUNDER **Ken Heissler (MBA 2008)** came to *Bulletin* readers with a question: Should the New Jersey-based company, which services large-scale, commercial solar energy structures, expand to California and other potentially lucrative but geographically distant markets? “We've been hesitant to take on opportunities outside our region because of how that might impact our service and quality,” Heissler said. “How do we grow without diluting our main value proposition?”

**How they answered the question:** QE Solar didn't expand to California, focusing instead on growing with their customers east of the Mississippi. “We held true to our value proposition. We're boots on the ground. We're high touch, high service. Not expanding to the West Coast has enabled us to continue to focus on our customers here.”

**Where they are today:** In three years, the company, which was founded in 2011, has grown from 5 employees to 18 and from about 20 clients to about 50. Revenue is projected to reach \$5 million this year, up from \$1 million in 2014. “Why be the rabbit? Just be the turtle,” Heissler says about his strategy to build a sustainable business.

**New challenges:** As founder, Heissler is the face of QE Solar. When its clients need something they call him; that's not scalable. “Now our focus has really turned to, how can Ken not be the face every day?” Heissler is slowly transitioning customer care to other members of his team, a process he calls necessary but sometimes painful.



# The Robots Are Coming to Save Your Job

Rethink Robotics doesn't want to replace human laborers—it wants to give them the ultimate coworkers

**Y**OU CAN TELL RETHINK ROBOTICS' PRODUCTS by their faces: A small, white digital screen with two expressive eyes. They have names, too: Baxter is its first-generation two-armed robot, meant for simpler jobs like unpacking boxes; Sawyer is a one-armed robot designed for more precise tasks like placing memory cards into motherboards.

The humanizing is intentional and essential to integrating the bots into a factory's workflow. "It's not the XY2000 machine, it's your coworker that you're com-

fortable working next to and interacting with," says **Scott Eckert (MBA 1995)**, CEO of the nine-year-old, 130-person, Boston-based bot maker. It's a tenet so core to the company that its logo features an icon of a human next to an icon of a robot.

Sawyer and Baxter make for good coworkers, Eckert says. Created for small businesses rather than the automotive industry—which makes up 70 percent of the US industrial robot market—Rethink's bots do the boring, monotonous stuff. Humans get more interesting jobs: the precise cuts, the polishing, the hands-on

Sawyer is one of two bots that Rethink Robotics has developed for the small-business market.

## Better Brainstorming

INNOVATIVE IDEAS OFTEN COME FROM BRAINSTORMING with peers—but does *who* you brainstorm with matter?

Yes, say Assistant Professor **Rembrand Koning** and Duke Associate Professor Sharique Hasan in a recent working paper. Their field research shows that the highest quality ideas are generated by people open to new experiences engaging with extroverted peers.

In 2014, the researchers headed to New Delhi to study the intersection of personality theory and idea generation with 112 aspiring entrepreneurs who were taking part in a three-week startup bootcamp. Participants underwent personality evaluation to determine their level of openness (defined as having greater curiosity, questioning convention, and entertaining novel ideas) and their level of extroversion (defined as having a high verbal fluency and a willingness to share).

The budding entrepreneurs were then asked to work together to come up with new software products for the booming Indian wedding industry. The ideas generated by the teams were rated by Indian consumers based on their novelty, whether they would buy the product, and whether the product had business potential. The researchers discovered that the ideas that were rated the highest were created through interaction between those with a high openness quotient and those who are naturally extroverted.

“The people who are the loudest and the most extroverted may have the most information to share,” says Koning. “But the best ideas are generated by open and creative people who are connected to these loud mouths.”

This was not what the researchers expected to learn. “There is a strong belief in the literature that openness was enough,” says Koning. “But our experiment shows it also depends on who you are brainstorming with. In certain situations, an open individual can even generate worse ideas if they brainstorm with a particularly introverted partner.”

The practical takeaway, Koning says, is that generating the highest quality ideas is a team effort, much in the way that a basketball team’s star shooter needs a teammate adept at passing the ball. For managers, that means actively looking for employees open to new and different ideas as part of a diverse staff, and encouraging them to seek out conversations with gregarious, outgoing peers. —JENNIFER MYERS

*“Conversational Peers and Idea Generation: Evidence from a Field Experiment,” by Sharique Hasan and Rembrand Koning, HBS Working Paper.*

testing tasks a robot just can’t handle. And like a good colleague, the robots are easy to teach, Eckert adds. Directing Rethink’s robots is as much about coaching as it is coding: Coworkers take a robot’s wrist, click down to engage, and then manually move the arm through the desired function to “train” it. Cameras and force-sensing technology—which allows a bot to “feel” its way through tasks (and around objects)—ensure that the robots operate with both safety and accuracy.

But the robots also possess that most important coworker trait: They’re not trying to steal your job. “The reality is that there’s a labor shortage in manufacturing,” says Eckert. A 2015 report by Deloitte and the Manufacturing Institute found that 2 million of the nearly 3.5 million anticipated open manufacturing jobs in the United States in the next decade will go unfilled. Europe has a similar problem, with consulting firm Prognos AG estimating that Germany could see a shortage of 3 million skilled workers by 2030; China, which accounts for about 20 percent of the world’s manufacturing production, will have a high-skilled labor gap of about 24 million by 2020, according to McKinsey. “You want to hang on to the labor you have, develop their skills, and move them up the skill and pay ladders,” says Eckert, with robots replacing only the bottom rungs. “You’re not finding 21-year-olds coming out of school and wanting to go into manufacturing. In China, there is actually a declining population of 21-year-olds, and so the problem is becoming even more acute over time.”

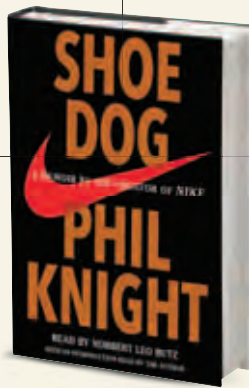
Beyond answering short-term labor needs, Eckert thinks these kinds of co-bots also have the potential to upend traditional factory economics. “For a generation now, you had to go to a low labor cost region and build a large-scale factory to be able to manufacture in an economically viable manner,” he says. “Today, though, I can actually build a smaller factory in the United States; have robots take some of the cost out, with high-skilled labor doing other parts of the work; and have a successful factory that is much smaller than what I would have had to build in China, for example—and take advantage of it being closer to the customer.”

It’s part of Eckert’s larger vision for the factory of the future that not only has a proximity advantage, but also is much nimbler—no longer a string of one-job bots tightening the same widgets a thousand times a day. Instead, he says, it will be able to react to shifting customer needs, with lines of wheeled Baxters and Sawyers reconfigured on the fly, based on data from both the production process and market performance.

This “agile factory,” he says, is a far cry from the monolithic, high-volume factories of a generation ago—and a system he hopes will ensure those happy faces spread from the factory floor to the market and the boardroom. —DM

## Required Reading

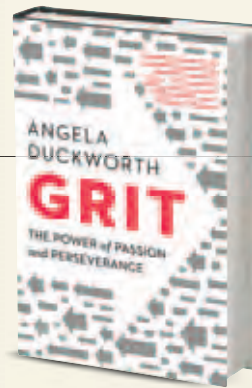
Alumni recommend the most inspiring business books they've read in 2017



RECOMMENDED BY  
STRATEGY CONSULTANT  
**Vivek Ravishanker**  
(MBA 2012)

### **Shoe Dog** BY PHIL KNIGHT

**Knight on the idea that became Nike:** "That morning in 1962 I told myself: Let everyone else call your idea crazy...just keep going. Don't stop. Don't even think about stopping until you get there, and don't give much thought to where 'there' is. Whatever comes, just don't stop....Half a century later, I believe it's the best advice—maybe the only advice—any of us should ever give."



RECOMMENDED BY  
ENTREPRENEUR  
**Eileen Rudden**  
(MBA 1976)

### **Grit** BY ANGELA DUCKWORTH

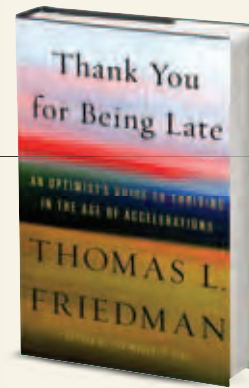
**Duckworth on the qualities of a leader:** "No matter the domain, the highly successful had a kind of ferocious determination that played out in two ways. First, these exemplars were unusually resilient and hardworking. Second, they knew in a very, very deep way what it was they wanted. They not only had determination, they had *direction*. It was this combination of passion and perseverance that made high achievers special. In a word, they had *grit*."



RECOMMENDED BY HEALTH CARE EXECUTIVE  
**Daniel Bowles**  
(MBA/MPP 2015)

### **Never Split the Difference** BY CHRIS VOSS WITH TAHL RAZ

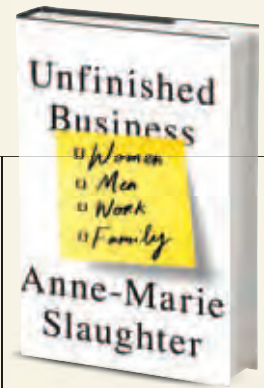
**Voss on lessons learned as an FBI hostage negotiator:** "Without a deep understanding of human psychology, without the acceptance that we are all crazy, irrational, impulsive, emotionally driven animals, all the raw intelligence and mathematical logic in the world is little help in the fraught, shifting interplay of two people negotiating."



RECOMMENDED BY MANUFACTURING EXPERT  
**Buckley Brinkman**  
(MBA 1986)

### **Thank You for Being Late** BY THOMAS L. FRIEDMAN

**Friedman on discovering the value of pausing:** "Because he was late, I explained, I had minted time for myself. I had 'found' a few minutes to just sit and think. I was having fun eavesdropping on the couple at the next table (fascinating!) and people-watching in the lobby (outrageous!). And, most important, in the pause, I had connected a couple of ideas I had been struggling with for days."

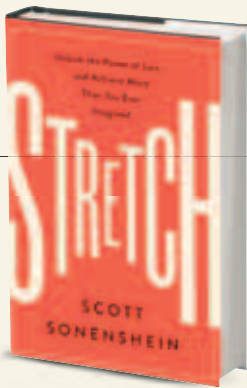


RECOMMENDED BY AUTHOR  
**Nanette Fondas**  
(DBA 1987)

### **Unfinished Business** BY ANNE-MARIE SLAUGHTER

**Slaughter on the feminist challenge of the 21st century:** "Advancing women means breaking free of a new set of stereotypes and assumptions, not only for women, but also for men. It means challenging a much wider range of conventional wisdom about what we value and why, about measures of success, about the wellsprings of human nature and what equality really means. It means rethinking everything."



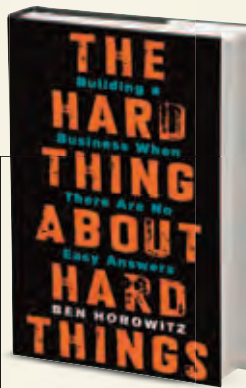


RECOMMENDED BY  
MARKETING EXPERT  
**Kathleen  
Harrington Clark**  
(MBA 1990)

### Stretch

By SCOTT  
SONENSHEIN

Sonenshein on recognizing your abilities: "We routinely overestimate the importance of acquiring resources but even more significantly underestimate our ability to make more out of those we have....Stretching is a learned set of attitudes and skills that comes from a simple but powerful shift from wanting more resources to embracing and acting on the possibilities of our resources already in hand."

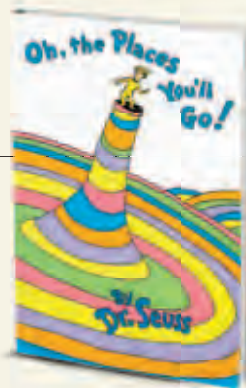


RECOMMENDED BY  
ENTREPRENEUR  
**Yong Kim**  
(MBA 2007)

### The Hard Thing about Hard Things

By BEN HOROWITZ

Horowitz on perception: "I was the only kid on the football team who was also on the highest academic track in math....As a result, I ended up moving in multiple social circles and hanging out with kids with very different outlooks on the world.... Looking at the world through such different prisms helped me separate facts from perception."



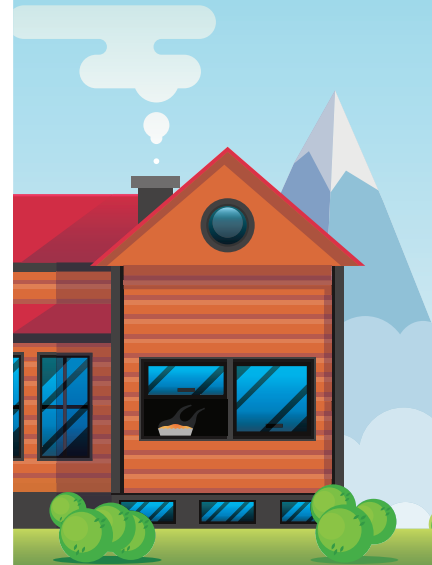
RECOMMENDED BY  
MARKETING DIRECTOR  
(AND PARENT)  
**Justin Mayer**  
(MBA 2005)

### Oh, the Places You'll Go!

By DR. SEUSS

Seuss on choices: "You have brains in your head. You have feet in your shoes. You can steer yourself any direction you choose. You're on your own. And you know what you know. And you are the guy who'll decide where to go."

# RENTING YOUR VILLA?



## HBS ALUMNI BULLETIN CLASSIFIED ADS

Is your beach house or chalet available? Do you have professional services or business opportunities to offer other HBS alumni?

Use the HBS Alumni Bulletin **Classified Ads** to reach more than **80,000 alumni worldwide** with your message. Make your pitch and get results!

**DEADLINE FOR THE  
MARCH 2018 ISSUE IS  
JANUARY 17**

See the last page of Class Notes for rates and submission guidelines

*From manufacturing to energy to health care, alumni experts weigh in on the new developments every business leader needs to understand. **PLUS:** HBS faculty on what happens next with electric cars, mobile banking, the shopping mall, and more*

# YEAR IN REVIEW 2017

EDITED BY  
APRIL WHITE

ILLUSTRATIONS  
BY JONATHAN  
CARLSON





THIS YEAR IN **RETAIL**

## Voice-Activated, One-Hour-Delivery Shopping

BY **RON JOHNSON (MBA 1984)**, FOUNDER AND CEO, ENJOY

TECHNOLOGY IS CHANGING EVERYTHING ABOUT HOW we shop. Two decades ago when we needed something, we went to the store. That's what we'd done for hundreds of years. Then we began to turn to the computer. Now shopping means reaching for our phones; today, over half of all online orders begin on mobile devices. And this year, we started using our voice to shop. Amazon launched that trend with Alexa, and recently Google and Walmart announced they are teaming up to do the same thing.

We are in the early days of this digital commerce—it has only been 23 years since Amazon launched its bookstore—but innovation is accelerating rapidly, and means big changes and challenges for the sector.

### What's next in retail?

"The mall is in big trouble, and that's a catastrophe for local communities that rely on malls for employment and taxation. Mall operators have to start thinking about who their real customer is; they used to think the real customer was the retailer. They also have to consider the most relevant use of their space for the community in which they operate. Malls now have the opportunity to embrace technology, not fear it. Augmented reality and virtual reality can reenergize the brick-and-mortar retail environment."

—Professor Rajiv Lal

We are seeing rapid changes both in traditional retailers and in startups. The largest traditional retailers are investing heavily in their online shopping capabilities, and many are making tremendous progress; Walmart and Amazon are in the middle of an epic competition that is going to be thrilling to watch. The startups that have been most successful have targeted a specific category—Peloton in exercise, Casper in mattresses, Warby Parker in eyeglasses—and focused on product quality, experience, and brand building. The losers have been the middle-of-the-road retail strategies—JCPenney, Kohl's, Gap, Abercrombie & Fitch—and the shopping malls they occupy. Their business models are completely outdated.

Customers want convenience, they want speed, and they want help. Five years ago, they thought getting a package delivered in a week was fast. Today, it's not uncommon to have products delivered within hours. And in the future they are going to want more than a thud at the doorstep. They are going to want a person to go through the door to assist them with the most important purchases they make. It's a great time to be a customer.

## The Supply Chain Goes High Tech

BY **JERRY JASINOWSKI (AMP 97, 1985)**,  
FORMER PRESIDENT AND CEO,  
NATIONAL ASSOCIATION OF MANUFACTURERS

THE GLOBALIZATION OF MANUFACTURING AND the increased dependence on digital technology is transforming the sector and changing its competitive advantage profile. This is a long-term trend, but we are seeing its effects more clearly with each passing year.

Globalization has meant that all companies must now be more cost competitive, in both domestic and foreign markets. Meanwhile, the explosion of digital technology has forced manufacturing to look at its competitive advantage not just in terms of cost competitiveness, but also in the way the sector defines products and markets. Product and market differentiation are now even more important than they have been historically. These truths apply across the manufacturing sector, but general industrial equipment and electronics are two areas where these forces are particularly strong.

We're also seeing the effects of digitalization on the supply chain. Nothing defines manufacturing more than the supply chain, and digitalization has allowed manufacturers to bring in inputs—both raw materials and finished products—from around the world and assemble them in a modern factory. It has also allowed them to be more responsive to customer demand. Customer relationship management is new in manufacturing, and again, the electronics industry is one of the first to have adopted this advance.

There are still many companies that haven't fully digitalized, but the next step will be embracing analytics and then artificial intelligence. We'll be seeing more and rapid change: The digital revolution is only about halfway through transforming the manufacturing sector.



### What's next in manufacturing?

"As physical retail declines, manufacturers are being forced to think about how to reach the market. The obvious answer is Amazon and a few other large e-commerce retailers, but that could result in a distribution bottleneck. I haven't seen it yet, but the most innovative manufacturers will start thinking about ways to reach their customers directly and at scale."

—Professor Gary Pisano

innovative manufacturers will start thinking about ways to reach their customers directly and at scale."

## A Future of Lower Energy Prices

BY **SARAH WRIGHT (MBA 1997)**, FOUNDER,  
HULL STREET ENERGY

FOR A LONG TIME, THE UNITED STATES WAS striving to become energy self-sufficient; now the country is self-sufficient and is becoming a net exporter of energy. That has pretty profound global economic and political implications, and we've seen some of those effects in the last year.

In 2017, because of healthy, albeit relatively slow, economic growth in the developed world and increasing urbanization in developing economies, we expected to see growing demand for oil and natural gas and a subsequent price spike. We saw the growing demand, but as soon as prices increased, the US production system responded immediately.

The United States has become the swing supply in the global system, a role that used to belong to Saudi Arabia, and technological advances mean that producers can respond more quickly than ever before. That means fewer supply constraints and less likelihood that oil and natural gas prices revert to historical mean levels.

Depending on where you are in the economic supply chain that can be beneficial or detrimental. If you look at all the economies that depend on petro dollars, the prospect of systemically low oil prices for a long time is a scary prospect. On the other hand, it

creates all kinds of interesting opportunities for energy-intensive manufacturing. You will also see restructuring in the power generation sector, as low oil and natural gas prices reduce power prices.

It may be a contrarian standpoint—there are a lot of variables—but I think the United States will continue to play the role of swing supplier for years to come. And because improving technology will allow the North American oil and natural gas production sector to respond ever more quickly to global demand spikes, this trend of lower oil and gas prices is likely to be a long-term one.



### What's next in energy?

"Electric cars. Everyone knows they are coming, but the energy sector isn't ready. There are two main questions: Is there going to be a market for gasoline in 25 years? And where are we going to get the electricity to power electric vehicles? We will need to generate more and consistent electricity. The sun doesn't shine all the time, and the wind doesn't blow all the time, so that may mean a new life for nuclear."

—Professor Richard Vietor

## Courting the Cord-Cutters

BY LAURA MARTIN (MBA 1983), ENTERTAINMENT AND INTERNET ANALYST, NEEDHAM & COMPANY

WHEN THE PHENOMENON OF CORD-CUTTING—dropping a cable subscription in favor of one or more online streaming services—started attracting media attention a couple of years ago, the TV industry didn't respond quickly. Cord-cutters were a very small piece of the TV ecosystem, but each time someone dropped their \$120 subscription it cost everyone in the chain, from the distributor to every content channel. Eventually the industry had to pay attention.

There are currently two primary approaches to winning back cord-cutters and preventing more people from canceling their subscriptions: the “skinny bundle” and over-the-top (OTT) services.

The skinny bundle is a response to customer concerns that cable packages are too expensive. The bundle had simply gotten too big; there were 250 channels, and the customer probably never watched 200 of them. At first, the obvious answer seemed to be fewer channels at a lower cost—but the skinny bundle never seems to satisfy anyone because it doesn't include customers' “passion” channels. There's no skinny bundle with the History Channel, for instance, or the Discovery Channel.

Meanwhile, there are 5,000 OTT “channels”—that is, content streaming online directly to consumers—and we saw companies like HBO and CBS introduce OTT services in 2014 and 2015, but adoption was slower than expected. Other companies were hesitant to follow until this year when Disney announced it will launch its own ESPN and Disney-branded streaming services. These OTT services are also helping the established players in the TV industry learn about their customers' changing viewing habits. Look at CBS's new *Star Trek: Discovery* series. A new episode will be released each week. Who will watch it in real time, and who will binge-watch it later?

Will either of these approaches work? I think the answer will be a hybrid model, with different options for different viewers.



### What's next in media?

“The continued rise of on-demand consumption, as exemplified by the Netfixes and Spotifys of the world, which are already putting significant pressure on linear broadcast networks and radio stations. Linear programming won't disappear—people will always want to watch sports content, for instance, in real time—but as most other content moves to an on-demand model, it will be difficult for advertisers to exist in this space.”

—Professor Anita Elberse

## Investing in the Next Generation of Workers

BY AMY MCINTOSH (MBA 1984), ASSOCIATE VICE CHANCELLOR FOR ACADEMIC STRATEGY, THE CITY UNIVERSITY OF NEW YORK

BUSINESS NEEDS TO CARE ABOUT THE PERFORMANCE of students in the public education system, from preschool through college. It is the primary source of future employees for every business. It's also where the vast majority of teachers of their future employees will come from. And public education will provide the diversity of employees that most leading businesses now recognize they need to be globally competitive.

There are two trends in the United States that should be of interest to the business world. First, there is an increase in publicly funded preschool programs, which prepare students for a successful educational experience in later years. And second, there is a new “culture of completion” in higher education, in which institutions are focusing on improving graduation rates for all students. Smart business leaders should support these efforts.

Business has been an ally of education reform in the past, but now, as the issue becomes more polarized, we need to engage in new ways. Take, for instance, the skills gap. In our current low-unemployment environment, businesses are having trouble filling middle-skills jobs. To remedy this, some businesses are partnering with public colleges to develop programs to meet specific needs. There is still some distrust on both sides: Higher education institutions see their mission as instilling skills for lifelong learning, not to pursue a good salary, and businesses can be daunted by the complexity of working with universities. But in states such as New York, California, and Tennessee, we are seeing meaningful partnerships, to the benefit of both the students and the economy.

### What's next in education?

“Technology has the potential to profoundly change education. The question mark is if high-quality, engaging online education can scale. Offerings such as MOOCs (massive open online courses) have wide reach but relatively low engagement, while approaches that offer faculty interaction result in high engagement but don't scale. The answer may lie in shifting attention to the “demand side” rather than just focusing on faculty and courses (the supply side)—for example, enabling the power of peer-to-peer learning. Done right, this could revolutionize education.”

—Professor Bharat Anand





THIS YEAR IN REAL ESTATE

## A Local Business Goes Global

BY FRANÇOIS TRAUSCH (MBA 1993), CEO, ALLIANZ REAL ESTATE

REAL ESTATE HAS TRADITIONALLY BEEN A LOCAL business, but more and more, it's becoming global, the same way so many other businesses have. On a year-to-year basis, we've been seeing global cross-border flows into real estate increase by 10 percent. In 2017, we continued to see this, despite the increasing geopolitical risks. This was a year of uncertainty: There was a new American president inaugurated; big election cycles in France, Germany, and Italy; and the question of Brexit. You would expect all those things to slow the flow of money, but they didn't. The year 2017 is proof that this trend is not going away.

This trend is being driven by two things. The first is the wealth buildup in Asia. The domestic real estate markets in Asia are still small, so Asian real estate investors have turned to Europe and the United States. (This year, for the first time since 2007, Asian investors are the largest cross-border investors, with

US investors relegated to second place.) The second is the move toward transparency in real estate markets. It's easier now for an investor to come into a foreign market like London or New York and get treated the same way that a local investor would.

The globalization of real estate is a positive change for this sector—and for other sectors as well. Real estate investment is about forming relationships, and from relationships come other business opportunities. Cross-border real estate investment is also stabilizing real estate markets. Take London, for example. For several years, it was the number one city for real estate investment. You would have expected that to change dramatically after the Brexit vote—and it did. A lot of European and US investors lost interest in London, but Asian investors filled that gap instantly and prevented prices from falling dramatically—showing the global impact on local real estate.

### What's next in real estate?

"The demand for all property types is being profoundly impacted by technology in ways we are only beginning to understand. Airbnb models will mean we need fewer hotel rooms; WeWork models will mean we need less office space; e-commerce will mean we will need less retail space and new kinds of industrial buildings. Autonomous vehicles—if the ethical, legal, and technical issues can be resolved—may reduce the need for roads and parking, allowing for more green space and affordable housing, which are especially needed in the US coastal cities."

—Professor Arthur Segel

## Telemedicine Has Arrived

BY HALLE TECCO (MBA 2011), FOUNDER EMERITUS, ROCK HEALTH; ANGEL INVESTOR; ADJUNCT PROFESSOR, COLUMBIA BUSINESS SCHOOL

THE TECHNOLOGY BEHIND TELEMEDICINE—health care delivered remotely and asynchronously—has been improving for years, but in 2017, the United States hit a tipping point. This year, Kaiser Permanente’s CEO announced that of the company’s 100 million-plus patient encounters with physicians annually, 52 percent were virtual visits. And Teladoc, the largest private sector telemedicine company, reported more than 300,000 virtual visits in the second quarter of 2017, a 55 percent increase over the same quarter in 2016.

Patients are becoming more comfortable with virtual health care, and we’re seeing significant investment in the area. At Kaiser Permanente, for instance, 25 percent of annual capital spending is invested in IT, and in the private sector, 102 telemedicine companies have received venture funding since 2011. In the first eight months of 2017 alone, 18 were funded. Regulation is also starting to catch up. It’s a state-by-state issue—you aren’t allowed to practice medicine across state lines, which makes it difficult for telemedicine to scale—but some states are beginning to ease restrictions.

Telemedicine is not going to replace in-person visits; it’s a way to triage that could help achieve better access to care and a lower cost of care. And employers are embracing telemedicine as a way to provide employees convenient health care at a lower cost for their companies. A survey conducted among large employers this year found that nearly all of them—96 percent—will make telemedicine services available next year to employees in states that allow it. We’re going to see a lot more investment in this area, from both established health care companies and startups.

### What’s next in health care?

“More constraints on drug price growth. Today, if a pharmaceutical company creates a drug and the FDA says it is safe and effective and doctors prescribe it, insurance generally will pay for it. But everyone is getting fed up with that approach—the ‘Pharma bro’ Martin Shkreli did not help—and we’ve reached a critical mass of public opinion that will allow for government or market-based constraints on drug pricing.”

—Professor Leemore Dafny



## Helping Consumers Improve Their Financial Life

BY OMER ISMAIL (MBA 2007), CHIEF COMMERCIAL OFFICER, MARCUS BY GOLDMAN SACHS, THE FIRM’S DIGITAL CONSUMER FINANCIAL SERVICES BUSINESS

LARGE CONSUMER BANKS HAVE HISTORICALLY collected a lot of data on their customers, which they have used to sell standardized products. Increasingly, however, we have seen new entrants using customer data to help the consumer and provide them with customizable products and insights to improve their financial life. Think of it like a trip to the doctor: The doctor doesn’t just tell you your cholesterol level. He tells you what that means, how it compares to others in your age group, and what choices you have given that information. That’s what fintechs and disrupters have started to do.

We know that consumers often feel overwhelmed by the topic of finances. They don’t feel as if they are in control. In other aspects of their life—for instance, in their shopping habits—consumers have access to a lot of information that in turn helps them feel empowered, and they are coming to expect the same from financial services firms.

However, consumers understandably have a different bar when it comes to shopping online for clothes versus picking the financial product that’s best for them. Finances aren’t

just personal, they are extremely emotional. So when it comes to helping consumers manage their financial lives, high tech is not enough. In our business, we also have to be high touch. Consumers love the convenience of a digital platform, but there will always be circumstances in the financial services sector when the consumer wants to talk to a person directly.

By using data to the benefit of the consumer and to learn what they need, rather than to sell them standardized products, consumer financial firms can forge a stronger relationship with their customers and help them feel in control. ▣



### What’s next in finance?

“The rise of mobile finance. Look at China: everything is already done on mobile devices, and social media services like WeChat are leading the way. The big question is, how are the banks going to respond? In China, where banks are less regulated, they are starting to branch into the mobile finance market, but it’s not clear what more highly regulated banks in other countries will do. Suddenly banks are ripe for disruption.”

—Professor Christopher Malloy



# HBS NEW VENTURE COMPETITION

## TAKE YOUR VENTURE TO THE NEXT LEVEL

### 2018 HBS Alumni New Venture Competition - Enter Now!

Hosted by 15 HBS clubs from around the world, this competition supports new business or social-impact ventures of HBS alumni.

Enter now for a chance to win:

**\$75,000 1st place cash prize!**

**\$25,000 2nd place cash prize!**

**\$5,000 “Crowd Favorite” prize!**

Participating ventures benefit from:

- Exposure to one of the world’s most powerful business networks
- Access to in-kind services to help build your business
- A chance to attend the HBS New Venture Finale on April 18, 2018

The deadline for entries is January 29, 2018.

Details at [alumni.hbs.edu/NVC](http://alumni.hbs.edu/NVC)





# Yoga Inc.

How far can yoga stretch beyond its spiritual roots?

BY DEBORAH HALBER

On a late summer day in Portsmouth, New Hampshire, in a large carpeted room with a colorful cloth tacked over a dropped fiberboard ceiling, **Bob Vaccaro (MBA 1970)**, short white hair, eyes crinkled with smile lines, sits easily, legs folded beneath him.

The door to his studio, Yoga by Donation, is never locked. Students slide dollar bills or, occasionally, tens and twenties into a black safe on an unattended reception desk before slipping off their shoes and finding a spot on the floor of the one-room studio. If you can't pay for a class, you sign up to vacuum, sweep, or dust. Five women and one man array their mats around a rose quartz sphere. "Dedicate your practice to a prayer in your life," he tells them. "Ideally, one of personal transformation."

It's a traditional approach that stands in contrast to a modern reality: Yoga today is not a spiritual pursuit so much as it is a \$16 billion global brand, with a number of HBS alumni involved in that transformation. Once limited to the devotees of a handful of swamis and gurus who introduced the practice to the West in waves from the turn of the 20th century through the 1960s, yoga now claims an estimated 36.7 million US practitioners purchasing classes, gear, and accessories—an increase of 80 percent in four years. It has also spawned a number of lucrative business models: Vancouver-based apparel company Lululemon Athletica expects to earn about \$2.6 billion in revenue this year; studio chain YogaWorks went public in August, valued at about \$40 million; and Wanderlust's yoga-focused festivals have attracted major crowds and major sponsors.

But the bigger the business of yoga gets, the further away it moves from its roots. It poses the kind of existential crisis that might require meditation: Can yoga lose its spiritual focus and still be profitable?

**Yoga first appeared** in sacred Hindu texts as a means to broaden consciousness, calm the mind, even mystically inhabit the bodies of other beings. The current notion of yoga as poses, breathing, and meditation is around 150 years old—a blip for an entity that dates, some believe, to the third millennium BCE. Yoga was widely introduced in the United States in the 1950s and '60s, as Indian practitioners emigrated to the country, and Americans traveled to the source to study with noted yogis. Although much of the practice's original spiritual underpinnings were lost in translation, Americans who embraced yoga brought their own desires for self-discovery and community to the mat. Yoga was a decidedly counterculture activ-

ity; guru Swami Satchidananda, his billowing white beard a shock against his bright orange robes, opened Woodstock in 1969. "Let all our actions, and all our arts, express Yoga," he told the crowd of some 400,000 people, before leading them in a resounding "om," a resonant sound considered sacred in yoga texts. In later decades, as the flower children faded, yoga became the province of the health club alongside step aerobics.

The modern US yoga experience is defined as much by its pants as it is by its practices. And one of the biggest drivers of that redefinition is Lululemon. The chain's 250 US stores—with more than 100 global locations—have established it as a leader in athleisure, a phenomenon it pretty much created. "From the foundation of yoga wear, we started a category that before us did not exist," says **Vivien Yeung (MBA 2001)**, Lululemon's chief strategy officer.

"Yoga is at the core of our identity and culture," Yeung continues. "It has kept us grounded in who we are as a company. It influences our brand strategy, the product categories we go after, and the relationships and experiences we create in our communities."

As Lululemon's senior vice president of global community, **Eric Petersen (AMP 175, 2008)** spearheads efforts to connect with customers, promoters, and loyal fans—in Lululemon-speak, "guests, ambassadors, and influencers"—in Beijing, Montreal, London, Los Angeles, Sydney, and the other cities that make up the company's global brand. Petersen, who joined the company in 2004 as head of marketing, says he's never seen another business open its meetings with meditation, or offer free yoga classes to all its employees. Yeung adds that enabling staff "to live a life they love, creating a common purpose, and instilling fun at work" helps attract and retain employees.

Yeung, who helps set Lululemon's long-term vision and market strategy, says that while principles of yoga have been at the core of the company's brand and culture, it has only recently amplified that message externally with the launch of its first global brand advertising campaign called This Is Yoga.

The spots include zero yoga as a physical practice. Olympic gold medalist volleyballer Kerri Walsh Jennings, Australian pop artist CJ Hendry, Beijing drummer Shi "Atom" Lu, London rapper P Money,



“We believe the pillars of yoga are expressed in different ways for different people. The practice is so much more than what happens on the mat.”

Understanding the public consumption ritual around yoga offers market opportunities through classes, accessories, and amenities.

and American pro surfer Maddie Peterson, among others, show off their respective skills, juxtaposed with yoga-related words such as “breath,” “meditation,” “self-discipline,” and concepts such as “joy,” “trust,” “letting go,” and “nonviolence.” Yoga “off the mat,” as Yeung puts it.

By expanding the definition of yoga and “celebrating the unexpected ways that it empowers people around the globe to live a life of purpose,” Yeung says the campaign “recontextualizes how the world sees yoga culture.” “We believe the pillars of yoga are expressed in different ways for different people,” adds Petersen. “The practice is so much more than what happens on the mat.”

**Rohit Deshpandé**, the Sebastian S. Kresge Professor of Marketing and an expert in global branding, believes that Lululemon’s biggest accomplishment has been positioning itself as an upscale athletic leisure brand akin to Nike, rather than as the accoutrements of a spiritual Indian pursuit. “Yoga is a very small part of what

they’re doing,” he says. “It’s cool to be seen wearing or carrying the Lululemon brand. It’s telling other people something about yourself.” And having a strong brand is especially important in this industry: “When you’ve got something like yoga in a very competitive marketplace with many different price points, including zero, the brand becomes absolutely critical.”

Besides, he observes, those seeking to make money from yoga need to weigh the pluses and minuses of that authenticity. Origin stories such as those used by Ben & Jerry’s and Peet’s Coffee have been crucial for brand success. Likewise, yoga is more authentic if, for example, you use Sanskrit names for the asanas, or poses. But others find what they hear as “Sanskrit mumbo jumbo” off-putting, Deshpandé says. At YogaWorks, former president and COO **Jay DeCoons (MBA 2006)** notes that the company encourages its instructors to stick to English and keep the spirituality to a minimum. “If you talk about a life philosophy,



Wanderlust retreats combine yoga, inspirational speakers, music, art, and food in a “celebration of mindful living” at venues around the world.

maybe that’s OK,” says DeCoons. “But I think that [yoga’s spiritual side] probably draws a little too close to religion for some people.”

For DeCoons, the draw to yoga was more physical. A former triathlete, he was invited by his investment firm’s partners to a hot yoga class. “I could not believe how I felt afterward,” he recalls. “That halo effect after a good sweat—it opened up my chest, and I got the entire therapeutic aspect of it.” DeCoons found that yoga also helped lengthen and restore his tight, overworked muscles, and it became part of his workout regimen. During his time at YogaWorks, he is credited with boosting the company’s market position and launching its online platform, as well as doubling the studio count—40-plus in seven cities—and annual sales. (DeCoons left YogaWorks in 2014 to head The Bar Method, an exercise studio with over 100 US locations.)

DeCoons believes the physical aspects of yoga that he found so beneficial also drew others to practice yoga. “People were realizing that they needed to take care of their bodies more, and that they were more stressed,” he says. Opportunities to strengthen, lengthen, and stretch, coupled with the “mental break” of breath work, resonated with clients. It’s all part of a larger “integrated lifestyle” movement, encompassing nutri-

tion and wellness, athleisure, and boutique fitness, he says. “It’s in vogue to work out.”

Then there’s Wanderlust, multiday festivals headlined by yoga instructors, musicians, speakers, and chefs, in locales known for natural beauty. “They are creating these experiences in an authentic way, so I think that’s definitely part of the future,” DeCoons says. “Even mainstream brands like Under Armour and Adidas want to be part of those experiential events, because they want to cater their products to support those lifestyles.” There’s an opportunity, he adds, for companies in industries peripheral to yoga and wellness to connect with a real brand that stands apart from other fitness experiences. “I know that’s happened already in other areas of fitness. I could see it happening more in yoga, for sure.”

Until recently **Daphne Kwon (MBA 1996)** was Wanderlust’s CFO, one of a team of almost 60 that produces a series of yoga- and music-based festivals and other events in 22 US and 23 international locations each year. Before joining Wanderlust last December, it struck her that she’d never worked in a place where would-be employees’ number one reason for applying was pure admiration for the brand—even if they’d never been to a Wanderlust event. The brand, she says,

“When you’ve got something like yoga in a very competitive marketplace with many different price points, including zero, the brand becomes absolutely critical.”

is synonymous with “finding out what’s important to you and whether your life is moving in the right direction. Being vulnerable. Being honest with yourself.”

The Wanderlust mantra “find your true north” is “all about people feeling like they are able to focus on themselves, with the core being yoga,” explains Kwon, now president and COO of Betaworks Studios. “The spirituality of yoga is alive and well at our festivals.”

Corporate sponsors also want in, to get their brands in front of the primarily female attendees with the disposable income for travel, food, and lodging, on top of \$100 to \$500 entrance fees. Wanderlust works with potential sponsors to fashion spaces where attendees can relax, shop, or eat between sessions: “Sponsors don’t necessarily know how to design an experience for someone who’s having a very self-reflective moment,” Kwon says. “They depend on us to do that. They want to associate with the beautiful experience.”

According to its website, Wanderlust is built on “the pillars of mindful living,” of which yoga is one, along with the arts, personal spirituality, environmentalism, and “conscious consumerism.” Attendees tend to snap up equipment, accessories, and apparel sporting the Wanderlust logo, so “upping our retail game was important, because we wanted to make sure it was a positive experience for them,” Kwon says. Adidas, for one, has launched a yoga-specific activewear line co-branded with Wanderlust.

Wanderlust won’t partner with a company that doesn’t share its vision, she adds, or that might “diminish the hard work and trust that we’ve built with our community.” When exploring a new direction or partnering with a new sponsor, she says that “we’re all of a like mind: Is this going to help people find their true north?”

That focus on the consumer is nothing new, of course, but Deshpandé notes that understanding the public consumption ritual around yoga offers opportunities and points of differentiation, whether it’s through classes, accessories, or amenities. Then there’s the question of price points and market segments: “Finding the right consumer segment is the major issue,” he says, “rather than throwing your product into what you see as an undifferentiated market and saying, whoever wants it can come and get it.” For example, as baby boomers age it could be beneficial to think of health-related concerns for that age group and how yoga in particular can address those needs. Or maybe—as some YogaWorks

studios have found—millennials prefer practicing yoga to hip hop music. Consumers will be drawn to, and pay for, those distinctions.

The same could be said for clients at Bob Vaccaro’s Yoga by Donation, even with its pay-as-you-wish approach. That model—more altruistic than capitalistic—sets it apart and draws a market segment that might not be so interested in wearing Lululemon’s Wunder Under Pants. As part of a pre-yoga, 20-year corporate career, Vaccaro created—and in 1990 was forced to sell—a multimillion-dollar health care business. That year, he started teaching yoga and treating clients with a hands-on therapeutic technique, and then in 2009 opened his own studio using the “standard business model,” he says, of clients paying for classes. But he increasingly heard people say they didn’t do yoga because they couldn’t afford it.

As fallout from the 2008 financial crisis worsened, Vaccaro bought out his partner, changed the studio’s name from Ocean Spirit Yoga to Yoga by Donation, and eliminated fees and memberships. “People came in droves,” he says. What’s more, the setup is simplicity itself: no bookkeepers, no passes, no paperwork. All teachers volunteer their time and choose what they teach. Once a week, a volunteer takes the donations, which manage to cover the \$1,200 monthly rent, to the bank.

Ironically, Vaccaro has had other studios seek him out about emulating his business model. He’s even been approached about franchising Yoga by Donation. “Think big or go home,” a consultant told him, but Vaccaro politely declined. His current business model, such as it is, works just fine.

And the search for additional models continues. DeCoons sees boutique studios dedicated solely to mindfulness and meditation popping up in New York and Los Angeles, the arbiters of cool. “I think the mental piece [of the yoga industry] is just scratching the surface. There are opportunities that I don’t think a lot of the fitness studios have figured out yet,” he says.

No doubt the evolution of yoga as a market is a story that will continue to unfold in the years ahead—and as it does, the Lululemons, YogaWorks, Wanderlusts, and donation models such as Vaccaro’s can coexist and thrive, says Deshpandé, all proliferating into increasingly narrow segments of a seemingly limitless market. In the end, maybe that’s the real beauty of yoga: Everyone comes to it in search of their own peace. ❧



Chris Kempczinski is one of the alumni working to modernize McDonald's.





# Happy Meals

**(ARE HERE AGAIN)**

The McDonald's turnaround isn't about reinvention—it's about remembering what made the Golden Arches a global icon in the first place

**BY DAN MORRELL**

PHOTOGRAPHED BY SAVERIO TRUGLIA

**Nick Karavites owns 24 McDonald's restaurants in the Chicago area and the surrounding suburbs, and when he visits them, he always keeps his eye out for a surefire sign of trouble: A customer talking to a manager. It means there was a complaint—about the food, about the service, some negative thing that had escalated to the point that a manager had been called on to straighten things out.**

SVP Kristy Cunningham on the rollout of all-day breakfast in 2015: "Part of the mantra we were pushing was, if it's good for the consumer, it will ultimately be good for the business."

Or at least, that's what it used to mean. In fall 2016, Karavites's location on East Chicago Avenue, on the city's North Side, got a high-tech upgrade. On a warm July day at a little past 11 a.m., as the early lunch crowd shuffles in, Karavites runs through the changes: digital menu boards, a mobile ordering system, a new delivery collaboration

with UberEATS, and self-order digital kiosks that allow dine-in customers to place orders and have them delivered to their tables—a service often performed by managers. "Now when I see a customer talking to a manager, it's a good thing," says Karavites, smiling.

Traditionally, the bank of cash registers that sepa-



rates the customers and the employees was like a line of demarcation. Now the workers are on the floor, delivering orders or helping customers with the new kiosks; Karavites has updated his employee training to include a focus on customer interaction. Average customer count is up at this location, he says, outpacing his other restaurants. But sales and transactions—the metrics Karavites tracks most closely—are up at all his locations.

The redesign is part of an initiative by McDonald's corporate to modernize the customer experience, which began in the US as a pilot in early 2016. The rollout has been relatively quick: By the end of this year,

McDonald's expects mobile ordering to be available at all its 14,000 locations in the United States, and the self-service kiosks in 2,500 locations. Karavites had seen these technologies previewed at McDonald's corporate conferences, but figured that implementation would be a ways off. "This is a really big ship to turn," he says. "But when I started hearing real, actual time lines—that was music to my ears." It wasn't just a vision but a plan.

And just as importantly, that plan wasn't a short-term revenue push but a cohesive, multiyear strategy. Karavites, who bought his first franchise in 2000, says the new alignment made him more confident about the future.

It's an optimism about the future of McDonald's that was hard to find two years ago. In January 2015, the company released its worst earnings report in 30 years, with revenue at its more than 36,000 global locations falling by 7 percent from the previous quarter, and earnings dropping by 21 percent from the previous year. Same-store sales also had their first annual decline in 30 years. For the US market, the reported 1.7 percent drop in same-store sales marked the fifth consecutive quarter of declines. In an earnings call with investors, CEO Don Thompson and other executives outlined the challenges, which included everything from international political conflicts to "an increasingly competitive marketplace." Most observers assumed

this latter challenge was a sign of America's changing tastes—that the fast-casual, more ingredient-conscious offerings from the likes of Panera and Chipotle were redefining the sector, and McDonald's wasn't keeping pace.

Five days after the call, Thompson announced his retirement. McDonald's global chief brand officer, Steve Easterbrook, was named president and CEO, and the turnaround was on. **Chris Kempczinski (MBA 1997)** had left Kraft Foods in September 2015, when he connected with Easterbrook, who was looking for someone to help him fine-tune his strategy. Kempczinski joined the global strategy team in late 2015, and was promoted to president of US operations in October 2016.

**Formulating a turnaround strategy required Kempczinski and his team—which included Kristy Cunningham—to get to the heart of what exactly had happened to the 62-year-old icon.**

Formulating a turnaround strategy, though, would require Kempczinski and the executive team—which included **Kristy Cunningham (MBA 1998)**, who arrived in 2014 as senior vice president for strategy and insights—to get to the heart of what exactly had happened to the 62-year-old icon.

It was a massive professional challenge: **Morgan Flatley (MBA 2004)**, who was hired as chief marketing officer last April, says that part of the reason she was excited about the gig was the chance "to work on this brand that is so central to the consumer fabric and psyche of our country." Cunningham, who left the CMO role at Hess to come to McDonald's, likewise couldn't ignore the opportunity to have an impact at a massive scale.

But it was personal, too: As a kid, Kempczinski had his birthday parties at McDonald's; his grandmother would get him McDonald's gift certificates every Christmas. Flatley would usually head to McDonald's with her mom and siblings after gymnastics class—a special, happy family moment amidst the chaos of crammed schedules. Cunningham's local McDonald's was a go-to post-soccer game location.

Their experiences weren't isolated. Ascending to ubiquity from the car-obsessed America of the late 1950s, McDonald's became a common language and a cultural export—an affordable and dependable escape.

For decades, McDonald's was a place to feel good. How could they make it that place again?



## The kind of updating that Karavites's

store underwent—the reshaping of the experience, the modernizing—that's the fun part of the turnaround, Kempczinski says. The less-fun stuff had to come first, though: foundational things, like paring back some of the organizational layers, improving cost-efficiency structures, franchising the restaurants in China. It was all the things that investors were pressing for—moves that saved the company \$200 million by the end of 2016, with a target of \$500 million by the end of 2018. “It was housekeeping,” says Kempczinski of the first 18 months.

And before McDonald's could even start spending money to fix the problem, it had to figure out what the problem was. Why were customers going elsewhere? What did they want?

Shortly after Cunningham arrived, she asked her team for the top three requests from US consumers. “My team said all-day breakfast, all-day breakfast, and all-day breakfast,” she says. For a company the size of McDonald's, it posed a massive operational challenge. Hurdles included everything from structure—

analytics help drive it.” “The genius of all-day breakfast,” says Kempczinski, “was the idea of starting from the front of the house and working to the back.” In other words, McDonald's was not going to ask the customer to meet its needs—it was going to have to meet theirs.

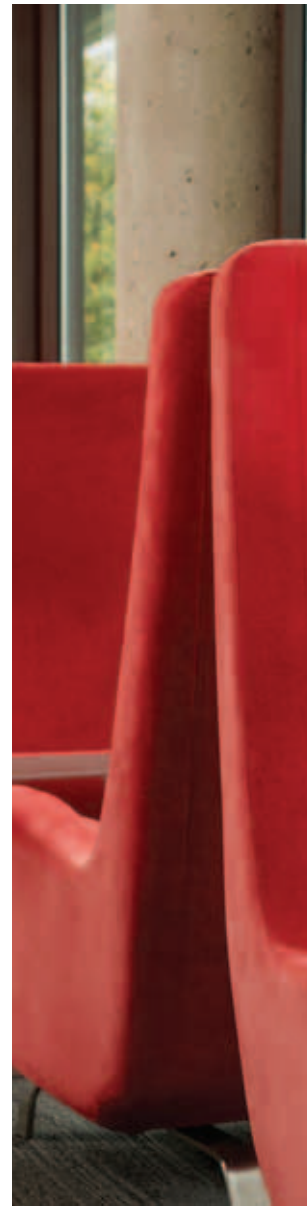
As successful as the effort was both for the bottom line and for shaping the company's culture, it wasn't enough by itself to turn the tide. Between 2012 and 2017, McDonald's estimates that it lost 500 million transactions to competitors. “We needed to understand: Was the underperformance structural? That we're in a bad spot, in the wrong part of the market? Was that driving it? Or was it that we were in a good part of the market, but we were just underperforming?” says Kempczinski.

It was a fundamental question about the company's future: Did McDonald's just need a revival? Or did it need a reinvention?

In 2016, McDonald's surveyed 30,000 customers in nine US markets to get to the heart of the underperformance. The results revealed hard truths: Customers were disappointed

with the food and the overall experience. But the data also showed that McDonald's wasn't losing to the fast-casuals like Chipotle and Panera—the bulk of those losses, Kempczinski says, were to “close-in” competitors. (Think Wendy's, Burger King, and Taco Bell.) Part of it was that McDonald's had lost its monopoly on convenience—something the company pioneered with its drive-thrus and a core element of its brand. “We used to be one of the few folks that had drive-thrus at every restaurant. Well, lo and behold, fast-forward several years, now everybody's got a drive-thru. And because our menu had more items than some of the other folks out there, ordering became more complicated—the kitchen became more complicated.” The more complicated things became, the longer the wait times got.

But there was a silver lining in the survey. Customers said they still liked McDonald's, and they wanted to come back. They just needed a reason. “There was a latent love for the brand,” says Kempczinski. “We had just been



**Survey data also showed that McDonald's wasn't losing to the fast-casuals—the bulk of those losses were to competitors like Wendy's, Burger King, and Taco Bell.**

McDonald's kitchens were designed to operate in two separate “day parts,” breakfast and everything else—to securing global supply networks to ensure that it could meet the massive increase in eggs orders. “That had prevented it from really even being seriously considered before,” she says. But 2015 was a good time for revenue-generating ideas at McDonald's. “Part of the mantra we were pushing was, if it's good for the consumer, it will ultimately be good for the business,” says Cunningham.

That April, Cunningham and her team first tested all-day breakfast in the San Diego market. It dominated. Customers who came in to buy from the “value offerings” were buying from the breakfast menu. Average checks and quality scores were up. It was even getting more of the millennial market to come into its restaurants. “It was kind of a shift in culture for us,” says Cunningham. “We were ordering equipment before we fully locked and loaded the business case. It's a great example of how we are trying to shift to be customer-focused, take some of the emotion out, and let the



underdelivering on what their expectations were.”

“In the end, we realized we just needed to be a *better* McDonald’s,” says Cunningham.

### Being a better McDonald’s came down

to tackling the three major customer criticisms from the survey. “You’re not as convenient as you used to be, you’re not giving me a great value, and the food is kind of just the same as it’s always been,” says Kempczinski, summing up the feedback. “So why do I come to McDonald’s?”

The food improvements started with its nuggets, with McDonald’s announcing in August 2016 that the nuggets would no longer contain artificial preservatives. This past March, it revealed that next year it would be using fresh beef in Quarter Pounders instead of frozen patties, and in May, McDonald’s unveiled its Signature Crafted Menu, featuring three upscale sandwich accompaniments: pico guacamole, sweet BBQ bacon, and maple bacon Dijon, adorning

either chicken or burger. “Our strategy is to innovate around our core quarter pound burgers and chicken sandwiches with new ingredients, and also appeal to millennial customers who are seeking new taste experiences,” says Cunningham.

Value was key, too. McDonald’s had dropped its Dollar Menu in 2013, and the rest of the market jumped. “Just as competitors were upping their game on convenience, they took advantage of our not being competitive on value,” says Kempczinski. “Our Dollar Menu clearly defined value for the industry for a good decade, and as we came off of that, we hadn’t really redefined what value meant to us.” Last year, McDonald’s launched a lower-priced McPick 2 menu, subsequently rolling out \$1 coffee and \$1 soft drinks. A new, national value menu is set to roll out in January.

Improving the customer experience meant implementing the physical and digital updates that Karavites’s restaurants had undergone but on a larger scale—part of a multiyear “Experience of the Future”

CMO Morgan Flatley says the good narratives about the business are there. “I think we just need to dust them off and show them in a new light to our consumers.”



McDonald's self-service kiosks will be available in 2,500 US locations by the end of this month.

initiative. Of all the insights gleaned from the survey, Kempczinski says that the customers' negative ratings on McDonald's convenience were the most surprising. "We felt like we had a birthright on convenience," he says, "so that was a wake-up call."

Again, the fix was customer-focused: McDonald's had to meet its customers' definition of convenience—delivery, mobile ordering, curbside pickup. Whatever way its customers wanted to get their food, McDonald's should offer it. "People want to control their own experience," says Kempczinski.

These new digital improvements offer not only speed but also new data streams and insights for Cunningham to utilize. Recent partnerships with Applied Predictive Technologies have allowed McDonald's to speed up its analytics, helping it make menu decisions more quickly. "It's great to be able to just test and learn," she says. The all-day breakfast rollout was a perfect example of data impacting strategy, Cunningham notes, allowing her to see the cause and effect almost in real time. "I can look at the trade implications, the service time and labor hour implications, and implications for our customer satisfaction scores."

The quicker pace is both new and necessary. "In the last five years, the world has moved faster outside the business than inside," CEO Easterbrook said in a video address about the turnaround in 2015. And the push permeates the organization. CMO Morgan Flatley offers the example of a Big Mac promotion earlier this year. Three different sizes of Big Mac were unveiled: the smaller "junior," the regular size, and the larger "grand." "There was an insight that a lot of the social media chatter around the junior Big Mac was actually being driven by women. So we pivoted and developed some of the specific creative around Mac Jr to be more targeted to women, using media or social media channels to drive that." That's the kind of agility Flatley wants. "How can we real-time gain those insights, and then either pivot our media strategies or make quick changes to the creative?"

Aligning strategy with customer insights means Flatley and Kristy Cunningham are in constant collaboration. "To be truly customer-centric, Kristy and I have to be working hand in glove," says Flatley. It's something she learned as she rose through the ranks of PepsiCo: The people who own the insights, she says, are closest to the consumer. "I see her as a key partner in bringing the truth of the customer to our team, and using that to build the marketing plan," says Flatley.

It helps that they are neighbors at the company's corporate headquarters in Oak Park, about 10 miles west of Chicago. "We yell over the walls," says Cunningham. "I probably text with her as much as I do my husband." The two have been pulling their teams together to discuss future initiatives, intent on breaking down silos. Chris Kempczinski's office—once inhabited by McDonald's founder Ray Kroc—is just up the hall. "Chris has made himself incredibly available for me to bounce questions off of—and to get his gut reaction and guidance as I go," says Flatley. "It is an enormous organization, and figuring out how to navigate it quickly and not make missteps is really critical." It helps, too, that Flatley and Kempczinski have shared experience, both having worked at PepsiCo. (Kempczinski spent eight years there as a VP.) "We both speak the same language. In some ways, he's helping me translate my experience from PepsiCo and from packaged goods to this reality, which has been really helpful."

And it feels like the three have a shared mission, says Cunningham. Previous McDonald's leadership has been more fixated on operations, she says, but now it feels like their three teams are focused on the same thing: the customer.

**This vision of a better McDonald's—faster, more modern, with better food—had taken hold in the front office, but it still needed to be sold to two**



A CONFERENCE ON

**AFRICAN AMERICAN BUSINESS LEADERSHIP:  
CELEBRATING THE PAST, DESIGNING THE FUTURE  
APRIL 20-21, 2018 HBS CAMPUS**

**ADVANCING AFRICAN AMERICAN BUSINESS LEADERS  
WHO MAKE A DIFFERENCE IN THE WORLD**

Dean Nitin Nohria and the Harvard Business School community invite you to join HBS for a **Conference on African American Business Leadership**, a two-day multi-disciplinary event that celebrates the vibrant and important role that African Americans have played in shaping our institution, the business world, and society at large.

This event also marks 50 years of the African American Student Union at HBS. This key inflection point in the School's history offers not only an occasion for reflection, but also an exciting opportunity for HBS to conduct new research, convene thought leaders, and undertake initiatives to advance African American business leaders.

**REGISTER NOW**

Open to all HBS alumni and students

**REGISTRATION FEES**

**Early Bird (before January 15)**

Alumni \$200  
HBS Student \$25

**Standard (after January 15)**

Alumni \$300  
HBS Student \$50

[alumni.hbs.edu/AASU50conference](http://alumni.hbs.edu/AASU50conference)

For questions, please contact us at [aasu50@hbs.edu](mailto:aasu50@hbs.edu).

important parties: those half million former customers they had lost in the last five years and current owner-operators, impatiently awaiting a salve.

For the latter, buy-in took a bit of pot-sweetening. Historically, when McDonald's offered to partner on upgrades, it would pay up to 40 percent of the cost of renovations, the rest covered by the owner-operators. But with the Experience of the Future initiative, McDonald's said it would cover 55 percent of the costs. "If we really wanted to do what we're trying to get done in the time we were trying to get it done, we needed to think a little bit differently, so we stepped up with more partnering," says Kempczinski.

**"This can't be a situation where we spend the next three years executing before we think about the strategy again," says Kempczinski.**

**"That sort of approach doesn't work."**

But with about 2,000 US owner-operators, consensus was impossible. Unveiling the plan at the end of February in a warehouse in Chicago's West Loop that had been transformed into an Experience of the Future showcase, Kempczinski was blunt with them. "There are parts of this each of you are going to hate," he told them. "The question is, 'Are there enough good things in the plan in its totality that you can at least live with the parts that you hate?'" The owner-operators ultimately approved the plan, estimated to cost about \$8 billion, split between McDonald's and the franchisees.

As for convincing the customer that McDonald's is now a modern, progressive burger company—a turnaround shorthand CEO Easterbrook has often employed—Flatley says it will require new creative, but not necessarily a rebranding. Her early view is akin to the company's larger insight that it didn't need to be a totally different McDonald's, just a better one. "We just need to tell more compelling consumer stories, and continue to connect with our customers in a really inspiring, motivating way," says Flatley. The stories are already there. "I think we just need to dust them off and show them in a new light to our consumers."

**Just a few miles from its corporate** headquarters, in a big hangar-like facility that lacks any kind of identifiable signage, McDonald's is preparing for the next era. In a room filled with full

kitchen and store mock-ups—complete with a drive-thru model—the future vision plays out like this: You approach a McDonald's, and when you are within 100 meters, the restaurant's "geofencing" technology recognizes your phone and brings up your regular Tuesday order (based on your order history) on the McDonald's mobile app. Then, the options: Add a par-fait for \$1 more? Some McNuggets for \$2 more? Pick up in the restaurant or via drive-thru? Curbside service? Pull into a spot and enter your curb spot number. Table service? Head in and take a digital location device to your seat so that the staff will know where to deliver your order. If you come through the drive-thru, your regular Tuesday order appears on a giant digital menu board. And payment, naturally, is integrated with the app. Convenience in myriad ways, as dictated by the customer.

Taking a longer view is an important part of the turnaround, Kempczinski says. In the short term, there are indications that the plan is working: McDonald's second quarter earnings, released in July, beat expectations, with the largest global traffic growth in five years; third quarter global comparable sales, released in October, also beat expectations, rising by 6 percent. "But this can't be a situation where we spend the next three years executing before we think about the strategy again," he says. "That sort of approach doesn't work." Strategic planning has been cooked into the new corporate calendar. "There are things that you can put into what I call 'the plumbing' of how the company works that force you to have those discussions, to do that kind of thinking. The big thing for us, too, is that we're going to learn that, as we execute the strategy, the world isn't going to stand still."

It's part of the rationale behind the company's upcoming move: Next spring, McDonald's corporate headquarters will relocate from Oak Park to downtown Chicago's West Loop—a hotbed for food trends. "There's a vibrancy to it, and it's a big millennial space. That's sort of where the future is being defined," Kempczinski says.

He knows the move alone isn't enough to change the company's culture: You can't just send out a memo or have a videoconference from the corner office and say, hey, this is the new culture—this is the new way we are going to operate, he says. "You actually need to get people to role model the behavior, to buy into the behavior." You need disciples, you need evangelists—you need to create situations that make it easier to model new behaviors.

It's one of the hardest things of managing any business, he says of shifting the culture. "Changing human behavior is a very challenging thing"—an insight as true for employees as it is for the millions of new McDonald's customers they hope to serve. ❧





**HBS FUND**

FOR LEADERSHIP & INNOVATION

**“We are proud to support the work of HBS in educating talented students who want to make a difference in the world.”**

— Jonathan and Jeannie Lavine (both MBA 1992)

The Lavines are among the thousands of alumni who support the HBS Fund, which provides flexible funding for new initiatives and core priorities. In addition, the couple endowed the Lavine Family Fellowship and Herbert J. Bachelor Fellowship and have launched a challenge to inspire fellow alumni to create new need-based fellowship funds. For more information, visit: [alumni.hbs.edu/LavineChallenge](https://alumni.hbs.edu/LavineChallenge).

**give.hbs.edu**

## THE OFFICIAL PODCAST OF HARVARD BUSINESS SCHOOL

Cold Call takes you behind the scenes of a case with the faculty author to explore what inspired the case, why it's relevant, and how it unfolds in class.

# H | B | S



COLD CALL

### HENRY McGEE

Telemundo: The Fastest Growing TV Network in the United States

CASE: NBCUniversal Telemundo: Transforming Latino Television

### JILL AVERY

Does Le Pliage Help or Hurt the Longchamp Luxury Brand?

CASE: Longchamp

### VIKRAM GANDHI

State Street's SHE: Investing in Women Leaders

CASE: State Street—The Development and Growth of SHE

FIND ALL EPISODES: [www.hbs.edu/coldcall](http://www.hbs.edu/coldcall)

## THE ALUMNI PODCAST

Skydeck features interviews with Harvard Business School alumni from across the world of business, sharing lessons learned and their own life experiences.

### SCOTT O'NEIL (MBA 1998)

The CEO of Harris Blitzer Sports & Entertainment—parent company of the Philadelphia 76ers and New Jersey Devils—discusses how to maintain a winning culture during a losing season.

### HUNTER HEANEY (MBA 1996)

The executive director of The Voice Project talks about protecting artistic expression and the power of music to change the world.

### JONATHAN WILKINS (MBA 2007)

The Chicago Bears team chaplain discusses the role of spirituality in sports.

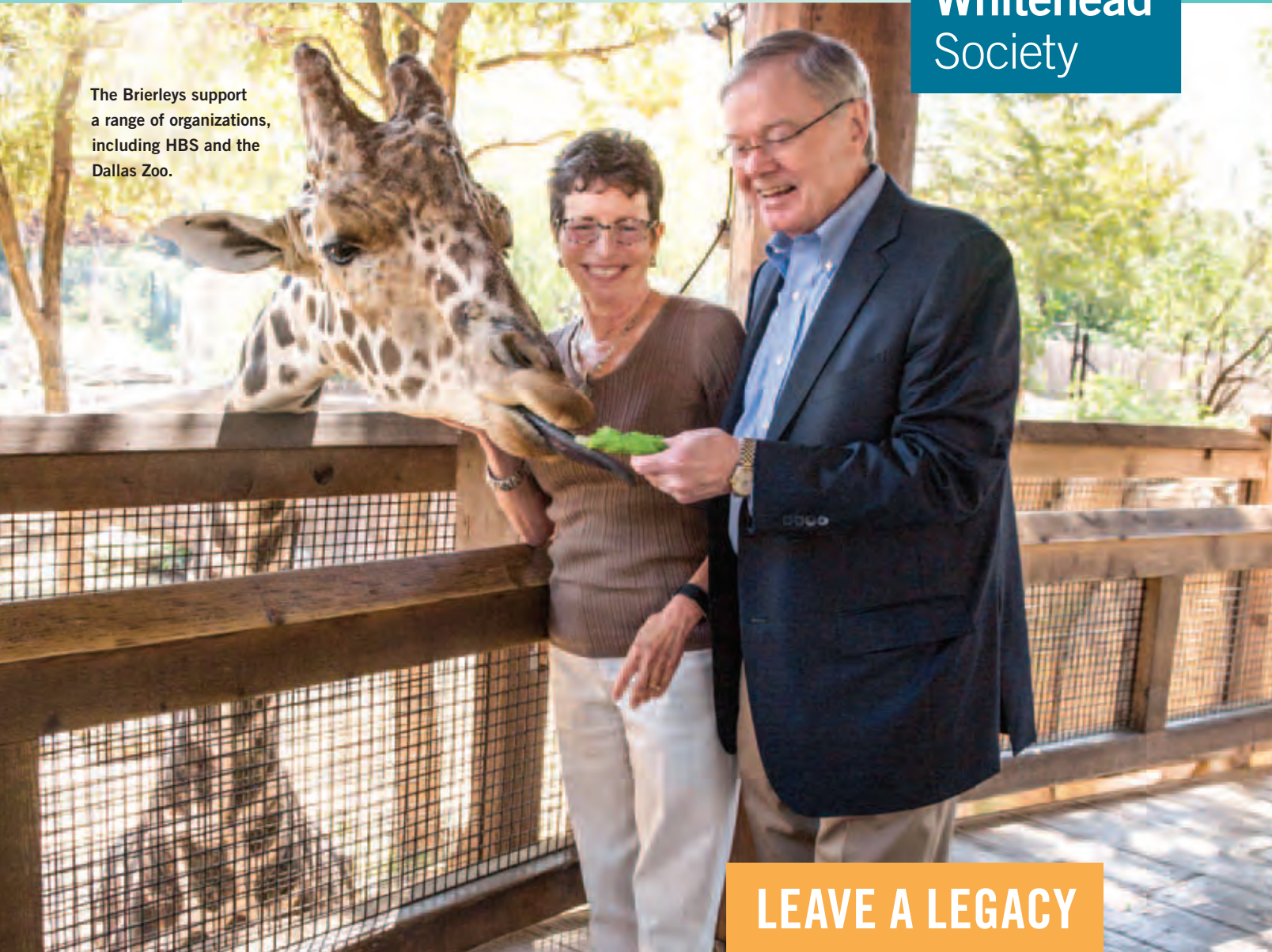
FIND ALL EPISODES: [www.alumni.hbs.edu/skydeck](http://www.alumni.hbs.edu/skydeck)



SKY  
DECK

# H | B | S Alumni

The Brierleys support a range of organizations, including HBS and the Dallas Zoo.



## LEAVE A LEGACY

“HBS unleashed my entrepreneurial spirit. I feel compelled to give back to the place that set me on the path to a unique and satisfying career. That’s why Diane and I included HBS in our will.”

**HAL BRIERLEY (MBA 1968)**

### LET’S WORK TOGETHER

You can include HBS in your will in a variety of ways. To learn more, contact the Office of Gift Planning.

[giftplanning.hbs.edu](https://giftplanning.hbs.edu)

[gp@hbs.edu](mailto:gp@hbs.edu)

877-744-7779

see also Vogue Italia feature spread on Rare 1  
[www.VogueItaliaPointer.com](http://www.VogueItaliaPointer.com)

# DAVID BIRNBAUM

*Rare 1*



IMAGE-4266

Rare 1 Diamond Necklaces  
All fine color & clarity  
more detail upon request

A) "Riviera"  
center: 1.70+ carat  
100+ diamonds  
20+ carats total

B) 47+ carats total diamond weight  
Rounds and Marquises

C) 26+ carats total diamond weight  
PearShapes, Marquises and Rounds

D) Classy Knockout  
40+ carats total  
PearShapes, Marquises  
& Ovals

E) 56+ carats total diamond weight  
Ovals, PearShapes and Marquises

video clips  
available



**DAVID BIRNBAUM\***

Private Jeweler to the World's Elite™

589 Fifth Avenue @ E. 48<sup>TH</sup> Street Seventh Floor New York 212.575.0266 David.Birnbaum.NY@gmail.com [www.RARE1.com](http://www.RARE1.com)

*tailored contemporary classic extra-very fine quality diamond necklaces*

\*HBS 1974