

Alumni Bulletin

MARCH
2017

COMMON GROUND ▶

— 52 —

Negotiating peace
in Canada's largest
rainforest

IBM, MD

— 46 —

How Watson is
transforming
medicine

DAVID BIRNBAUM

Rare 1

PRIVATE JEWELER

IMAGE-3869

RARE JEWELS

all centers shown: 3 carats

Ceylon Pink Sapphire:

Oval shape

lab-certified: natural unheated

set in micro-pavé setting



Paraiba Tourmaline:

Cushion-cut

top lab-certified

set with two half-moon diamonds



Gem Ruby:

Cushion-cut

certified pigeon's blood / VIVID

lab-certified: H(a)

set with two cushion-cut diamonds



Gem Burma Sapphire:

Oval shape

lab-certified: royal blue

set in micro-pavé setting



Padparadscha Sapphire:

Cushion-cut

lab-certified: natural unheated

set with two baguette-cut diamonds



[All Lab-certified]

side diamonds: premium goods

all items in principle available in 4 - 10+ carats



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ON THE COVER: Wally Eamer photographed by Kamil Bialous. **ABOVE:** Terris Moore climbing Minya Konka, October 1932. Courtesy University of Alaska Fairbanks Archives.



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Air Time

INPUT

@HBSAlumni What should alumni look for when joining a startup?

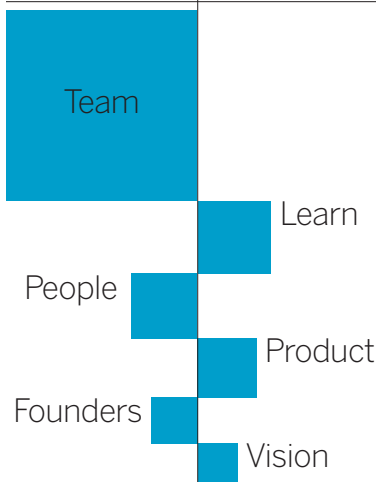
“Character of people. Goodness that goes beyond competency.”

—@AnthonyTjan
Anthony Tjan
(MBA 1998)

“Must absolutely love these three: Team, Product, and Vision. They will carry you through the toughest times.”

—@yongkookkim
Yong Kim
(MBA 2007)

Most common words in responses



FOLLOWING

@Rich_Wilson Photographer, entrepreneur, and investor

Good morning, from the Pacific Ocean!

#VG2016 #sitesALIVE

In February, veteran skipper Rich Wilson (MBA 1982), 66, became the oldest person to complete the Vendée Globe yacht race—a non-stop, solo voyage around the world.

CITED

“Transmitting energy from rural wind farms across long distances to large cities is a big obstacle. I figured the world didn’t need another Midwest wind developer as much as it needed someone who could figure out the transmission problem.” —Michael Skelly (MBA 1991), founder and president of Houston-based wind-energy startup Clean Line Energy alumni.hbs.edu/skelly



VOL. 93 NO. 1

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

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Interest

03|2017

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NOW PLAYING

Swimming with the Stream

A musician's guide to releasing albums in the modern era

WHEN **Kiran Gandhi (MBA 2015)** THINKS ABOUT MARKET-
ing her music, she thinks about it in consumer product
terms. A feminist activist and former drummer for Grammy-
nominated artist M.I.A., she wants her new electronic
solo project, Madame Gandhi, to be more than just a jog-
ging soundtrack. "How can I be *the* person people think of



when they think about power and inspiration? How can I be the go-to destination for music and feminism?" she says. "The best companies are the ones that think, 'How can I serve the customers best?'"

But first, she has to get those customers. Gandhi, who released her first EP, *Voices*, in October and heads off on tour this month, has done stints at both Spotify and Interscope Records, which provided her with unique insight as she planned promotion and distribution for the EP. Here, she offers an inside look at how strategies are shifting in the streaming era. —DAN MORRELL

The Remix

BEFORE RELEASE	RELEASE DAY	POST-RELEASE TOUR
<p>OLD MODEL: Find the right label</p> <p>NEW MODEL: Find the right platform</p> <p>If you're an independent artist, music distribution platforms like TuneCore and CD Baby can get your music on iTunes and Spotify but at a cost—which can be tough if you're a struggling artist not looking to add expenses. Instead, Gandhi says that many artists just choose to release their music through SoundCloud, which is free but only offers exposure through the one, very cluttered platform. Gandhi opted to release her music through Stem, a two-year-old LA-based startup where she was an artist-in-residence last year. In addition to getting her music to the masses, it tracks where her money is coming from—a revolutionary concept, she says, in an opaque world of music revenues where "no one really knows what a stream is worth...they just hope to get a check in the mail at some point."</p>	<p>OLD MODEL: Use videos to build buzz</p> <p>NEW MODEL: Use videos to make sales</p> <p>When she was working as a digital analyst at Interscope Records before HBS, Gandhi identified a common pattern: Labels would first release a music video to YouTube to create buzz, and then drop the audio a few weeks later. But she realized that the approach was missing an opportunity to translate that excitement into actual audio sales—it was marketing product unavailable for purchase. And it didn't have a shelf life: "YouTube videos can drive traffic to audio streams and sales, but viewing the video is often a one-time experience for most fans. So it is important to have the audio available online." For her first single, "Her," Gandhi released the video and the single at the same time; for the next track, "Moon in the Sky," she released the audio first and the video a few weeks later. The test only proved her point—releasing the audio and video simultaneously was by far the stronger move. "Her" is Gandhi's most-streamed song; "Moon in the Sky" is her least-streamed song.</p>	<p>OLD MODEL: Release and tour</p> <p>NEW MODEL: Release, react, refine, and tour</p> <p>"Back in the day, you'd release your album at Tower Records or HMV, and the fans would line up. And if you didn't tour right then, you were irrelevant," says Gandhi. In the streaming age, though, the discovery timeline is much longer—about six months, she says—which offers advantages: One, it allows more time for repeat listens and emotional connections to the music ("you've provided the soundtrack to their life, so there is even more excitement for the show") and two, the data that artists can get from their streams help uncover fan bases in cities they might not have otherwise considered for tour stops. "It is no longer only the Top 40 artists dominating the live show landscape. All of us can find our tribes and build a successful following," says Gandhi. "The industry is less of a zero-sum game thanks to streaming." Plus, all that extra time can help polish a live show. "We had a minimum viable product and it worked," she says. "But that extra time helped us build a show that will just be extraordinary."</p>



Interest

Left: Mark Twain in front of his childhood home in Hannibal, Missouri; Below: The museum, which includes a children's books exhibit, encourages visitor engagement.

PROLOGUE

By the Book

The new American Writers Museum tells a nation's story

BEFORE HE ARRIVED AT HBS, Jay Hammer (MBA 1979) WAS PURSUING A PhD in literature at Johns Hopkins. Daunted by the increasingly narrow focus required to complete the degree, he turned to business. "Being able to apply a variety of skills to a broad scope of challenges felt like a dam breaking open," says Hammer, now president and CEO of Theralogix, a nutritional supplement company he cofounded in 2002.

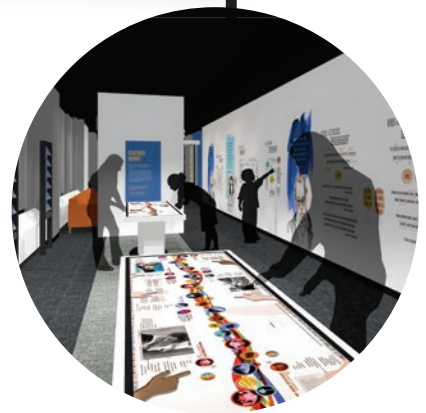
But Hammer's love of reading never left him. Part of a "relatively heavy-going" book club, he met monthly to discuss the work of Nobel Prize winners, including Herta Müller and Kenzaburō Ōe, as well as more mainstream authors such as Michael Chabon and James Michener.

In a novel, that would be the perfect setup for what followed: Fellow book clubber Malcolm O'Hagan asked Hammer to lend his business savvy to help found a museum dedicated to American writers similar to the Dublin Writers Museum of O'Hagan's native Ireland.

"In the United States we have a number of discrete, unrelated houses and centers dedicated to individual

writers, but no single location celebrating the country's rich, diverse literature," Hammer says. He joined forces with O'Hagan and German-born Werner Hein to help plan and fundraise the vision into reality. Six years later, the American Writers Museum will open in late spring at 180 North Michigan Avenue in Chicago, with Hammer serving as treasurer.

"I had been chair of Washington Performing Arts but knew nothing about museums and what it took to start one," Hammer says, noting that the founders drew on planning documents for several recent museums, including the Smithsonian National Museum



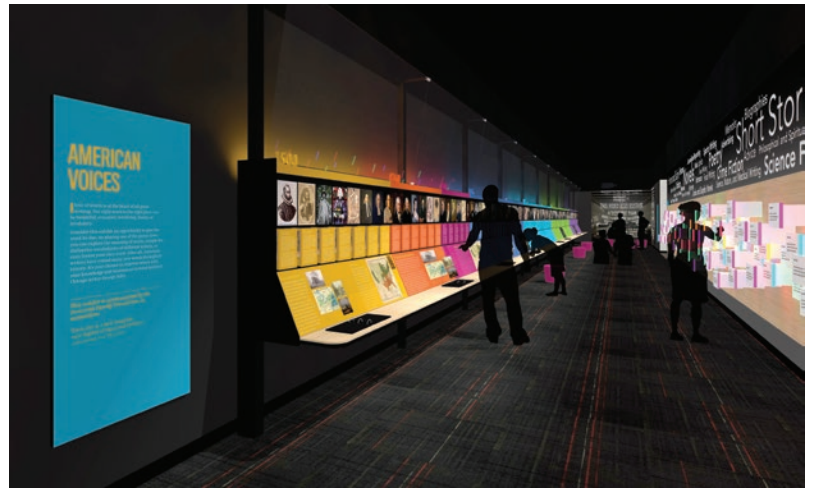
of African American History and Culture. “For a museum on our scale, it takes a lot of planning, but it doesn’t take a lot of staff,” he says. “And surprisingly, it doesn’t take a lot of money—we’ll bring this in at under \$10 million, and that includes some reserve for the first several years of operation.” Funding came from private and public sources, including a grant from the National Endowment for the Humanities.

While visitors might see a few artifacts, such as the 120-foot-long scroll on which Jack Kerouac typed *On the Road*, the museum’s spirit is much more interactive and participatory. Visitors can contribute a sentence to the ongoing “Story of the Day” exhibit, delve into 100 curated works of literature (from the Federalist Papers to newspaper columns to contemporary works of fiction), experience a holographic “waterfall” of projected words from stories and poems, and peek into the nooks and crannies of a

“surprise bookshelf” to learn about an author or a literary work.

“This seems to be a particularly good time to remember that the United States was established as an idea, one that was explicitly argued about in speeches and articles, and then eventually given form by written documents that stated its values,” says Hammer. “Since then, generations of writers—whether they be poets or novelists, speechwriters or journalists—have embellished and shaped what America means. Understanding our writing is one way to understand what America is and can be in the future.”

—JULIA HANNA



The “American Voices” exhibit presents 100 authors across 400 years through writer excerpts, criticism, and images.

@Soldiers Field



“Industry at its best is the intersection of science and art,” Polaroid founder Edwin Land wrote more than 50 years ago. On display through July, Baker Library’s **“AT THE INTERSECTION OF SCIENCE AND ART”** looks at Land and Polaroid in the 1930s and ‘40s, when the iconic company was a risky startup led by an untested entrepreneur.

A **“HACK YOUR SLEEP”** event offered insights into the science of slumber—a subject unfamiliar to many MBA students. Cosponsored by the student-run HBS Health Care Club, the program featured a talk by Harvard Medical School psychiatry professor Robert Stickgold, who recently published the first scientific study on dreams in 40 years.



Professor **Michael Norton** interviewed best-selling **AUTHOR MICHAEL LEWIS** about his latest book, *The Undoing Project*, a profile of Daniel Kahneman and Amos Tversky, the founding fathers of behavioral economics. Their longtime collaboration would eventually affect every field imaginable, but Lewis said the practice of it was less dramatic: “What it was, was two guys who loved each other sitting in a room thinking about some unbelievable, interesting [stuff],” he told the Burden crowd.

The **HBS STUDENT ASSOCIATION**—headed by its first female copresidents, **Libby Leffler** and **LaToya Marc (both MBA 2017)**—offered an unconscious bias training session facilitated by Harvard’s Project Implicit and cosponsored by CVS Health to help students better understand how built-in assumptions impact all aspects of their work and personal life, such as hiring a new employee or choosing a teammate.

STARTING LINEUP

No Reservations

There's something new on the menu at these food-focused alumni startups.

Interest



The Company	The Leadership	The Pitch	The News
EatWith	CEO Susan Kim (MBA 2003) : FOUNDED 2012	<i>This online marketplace allows cooks to sell seats at their dinner tables.</i>	TripAdvisor is the latest investor in this social-dining service, which operates in more than 200 cities around the world.



Blue Apron	Cofounder and CEO Matt Salzberg (MBA 2010) : FOUNDED 2012	<i>This meal-kit company delivers all the ingredients you need to make a home-cooked dinner.</i>	Reports say that the company is on track to surpass \$1 billion in revenue in 2017, in a sector that generated an estimated \$1.5 billion in sales last year. There are also rumors of an IPO.
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Chorus Hospitality	Founder and CEO Michael Tisch (MBA 2014) : FOUNDED 2015	<i>"A service-focused management partner," Chorus Hospitality invests in and creates culinary concepts.</i>	Brooklyn's beloved independent pizzeria and tiki bar, Roberta's, is Chorus's most-talked-about new investment.
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Chai Point	Cofounder and CEO Amuleek Singh Bijral (MBA 2006) and advisor, HBS professor Tarun Khanna : FOUNDED 2010	<i>An upscale tea chain with more than 100 stores—with 60 more planned—throughout India.</i>	Chai Point has introduced an Internet of Things-enabled tea-dispensing machine for offices.
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3-Minute Briefing

Wick Moorman (MBA 1989)

President and CEO, Amtrak; retired Chairman, President, and CEO, Norfolk Southern

I'M ON A TRAIN RIGHT NOW. Obviously, I look at the experience in a slightly different way than I used to. I now spend almost all the time talking to people who are working on the train and to our customers.

The story I tell, which is apocryphal, is that my mother was picking me up out of the cradle when I was about two, and she dropped me on my head. When she picked me up, I was intact other than **I HAVE THIS STRANGE LOVE FOR TRAINS.**

I've always believed that most people are inherently disposed to **THINK POSITIVELY ABOUT THE RAILROADS.** And that's an advantage we have, and one that we should and can do more to take advantage of. People don't have that inherent kind of belief about trucks.

I spent 12 years on the engineering side of the railroad industry, supervising infrastructure maintenance. I then had what I always describe as **AN EARLY MIDLIFE CRISIS.** My wife said that was OK but to remember that I only got one. That's how I ended up at HBS.

I try hard to have an open-door policy and listen to everyone. **I'M LUCKY IF I HAVE ONE GOOD IDEA A YEAR.** I'm tapped out by May. It's the people who are dealing with customers, running trains, and running the company—that's where the ideas are.

When I stepped down from Norfolk Southern after 45 years, I absolutely did not plan to take another job. **I SAID NO TO AMTRAK.** Then they called again.

I negotiated hard, obviously, for compensation. **I'M MAKING A DOLLAR A YEAR.** . . . I think passenger rail transportation in this country is an important thing. And I also believe that over the next 10 years it's going to become more important. I view what I'm doing as a form of public service.

The number one thing we need to work very hard on is creating a better safety culture. Hand in hand with that will go a better operating culture. **CULTURE CHANGE TAKES A LONG TIME.** But I can start that and then make our case to our political leaders that Amtrak stands ready to grow and to provide a very necessary service to our country. —AW





QUERIES

Adjusting Forecasts

How should companies confront climate change?

Interest

PROFESSORS **Mike Toffel** AND **Marco Iansiti** PRESENTED the more than 900 RC students in their Technology & Operations Management sections this past fall with an open challenge: choose an organization whose operating model will be significantly affected by climate change, and tell us what it should be doing to address it. Students posted responses to the prompt on HBS's Open Knowledge—a public blogging platform developed by the School's Digital Initiative to facilitate online and offline conversations around classroom topics. Responses ranged from oil companies to ice-cream makers and almost everything in between. We've excerpted a few of them here. —DM

SHAKE SHACK

DATA POINT: "The UN's Food and Agriculture Organization estimates that 14.5% of worldwide greenhouse gas emissions are a result of livestock, and beef and dairy production account for 65% of livestock emissions."

FIX: Give Up Beef. "Given Shake Shack's position as a mission-driven and fast-growing brand, and its commitment to 'Standing for Something Good,' Shake Shack should lead the charge on developing a non-beef burger." —E. JORDAN TAYLOR (MBA 2018)

H&M

DATA POINT: "Last December, *Forbes* reported that the apparel industry accounts for 10% of global carbon emissions and remains the second-largest industrial polluter, second only to oil."

FIX: More Consumer Education. "While the corporation's internal practices greatly impact the envi-

ronment, H&M believes that 26% of the greenhouse gas emissions in a garment's life cycle [occur] after the product is sold to the end consumer (the disposal and maintenance of the clothes). In order to really move the needle in the reduction of greenhouse gases, customers need to play a more significant role."

—PIERSTEN GAINES (MBA 2018)

VAIL SKI RESORT

DATA POINT: "The typical ski resort needs 100–105 days of skiing to secure the average industry profit margin of 6.5%–7%. Fewer visits put pressure on Vail's profitability, and to illustrate the impact, Vail recorded a \$2 million loss in the second quarter of 2008 compared to 2007."

FIX: Become an All-Weather Destination. "Vail should... become a recreational center that also offers skiing. By making outdoor activities its core business, Vail can build a community where people can spend time irrespective of the time in the year."

—WISSAM ABOURIZK (MBA 2018)



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“I give because I’m a believer in and champion for all things HBS. The School gave me the skills, confidence, inspiration, and network to pursue my passion.”

— Jennifer Lee Koss (MBA 2008)
Toronto, Canada

A former cellist and finance professional, Koss cofounded BRIKA, a unique retail marketplace for talented artisans and designers, in 2012. She is just one of the thousands of alumni who give annually to the HBS Fund for Leadership and Innovation. The HBS Fund provides immediate, flexible funding that helps the School to provide generous financial aid, foster educational innovation, and develop thought leadership.

give.hbs.edu

LEADERSHIP

History in the Making

Preserving decades of business lessons from emerging markets

“ONCE UPON A TIME,” NALLI KUPPUSWAMI CHETTI begins as he recounts the history of weaving in India and the 89-year story of Nalli, his family’s iconic silk sari company. Chetti, interviewed by Professor **V.G. Narayanan**, is one of 80-plus noteworthy business leaders from Africa, Mexico, Central and South America, South Asia, and Turkey whose wisdom and experience are now enshrined in the Creating Emerging Markets Oral History Collection at Baker Library. This winter, the HBS Business History Initiative, which launched the project, hosted a conference in India to celebrate the addition of more than a dozen in-depth interviews with Indian executives to the collection, including Chetti, Bajaj Group chairman **Rahul Bajaj (MBA 1964)**, and Shahnaz Herbals founder and CEO Shahnaz Husain. –AW

Interest



Photographs and advertisements from Nalli’s nearly nine decades in business.

The Nalli story

<p>PAST</p>	<p>Chairman Nalli Kuppuswami Chetti on his introduction to the family sari business, started by his grandfather in Madras (now known as Chennai) in 1928:</p> <p>“From 1946 onwards I used to go to our shop after finishing my homework....[I]n those days one sari’s cost was 12 rupees, [and the cost] of a nine-yard sari was 18 rupees. If the sales crossed 100 rupees my father used to offer me one ice cream. So I would finish my homework by 7 to 7:30 p.m. and go to the shop.”</p>
<p>PRESENT</p>	<p>Chetti’s son, Ramanathan Nalli (OPM 22, 1995), formerly chairman, now serves as vice chairman of the Nalli Group of Cos. Under his leadership, the company grew from one retail store in Chennai to 30 locations throughout India, selling 1.5 million saris a year.</p>
<p>FUTURE</p>	<p>Lavanya Nalli (MBA 2011)—the fifth generation to join the family business—was named a vice chairman in 2016. She is leading efforts to double the company’s number of stores and to grow its e-commerce offerings. Her younger brother, also a vice chairman, runs Nalli’s new jewelry business.</p>

Interest



IN MY HUMBLE OPINION

Staking Change

Nigeria's Iron Lady goes global

WORLD BANK VP AND TREASURER Arunma Oteh (MBA 1990) has a clear sense of why she likes her job: “You bring very sophisticated finance tools to tackle the world’s most challenging problems.” Originally from southeastern Nigeria, she grew up with Nigerians from several different ethnic groups in the country’s north, along with Indian, Chinese, European, and American expats. “My early exposure to people from diverse backgrounds is probably the reason I enjoy such environments,” says Oteh, who served for 17 years at the African Development Bank before her 2010 appointment as director general of Nigeria’s Securities and Exchange Commission.

Today, Oteh and her World Bank team manage more than \$150 billion in assets. “Our leadership understands that you can bring innovation from the private sector and capital markets to solve the world’s most difficult challenges,” says Oteh. She describes visiting World Bank projects in India that mitigate risk in tsunami-prone areas and help rebuild stricken communities: “In one instance, I met a couple who, for the first time, owned the title to their newly rebuilt home. As a result, they had enough collateral to start a small business. That is the real change that makes what I do so special.”

—JH

Dinner-table finance: “We used to grumble as children because my father would make us read through the annual reports of companies he had invested in, but that was an early influence: realizing I had an education and holidays because my parents complemented their income by investing in

the Nigerian stock market.”

Nickname: The Iron Lady, for her tough antifraud stance as director general of SEC Nigeria. “We made sure that the cost of wrongdoing was very high and that there were no sacred cows. I knew that the Nigerian capital markets could be transformative—that this was a role where

I could really contribute to the development of my country.”

Pathbreaker: “I admire Madam C.J. Walker, an African American woman who became a millionaire by creating and marketing hair products that she couldn’t find for herself.”

On corruption: “When you read the press on Nige-

ria you assume that everybody is doing things that aren’t proper. The reality is that there are only a few bad eggs. If you do the right thing and people see that you are making a difference, you will get support beyond what you can imagine.”

Hometown returns: Oteh has built a football arena in Item,

her hometown in Abia State, in addition to funding scholarships and providing medical services to the underserved. “I’ve been blessed, and I believe very strongly in the importance of giving.”

Smart money: The Pandemic Emergency Financing Facility, a new World Bank financial program that provides surge funding to prevent a disease outbreak from becoming a more deadly, and costly, disaster. “Because the money was not immediately available during the Ebola crisis, we had more human losses than we should have, which rolled back development gains made in Sierra Leone, Liberia, and Guinea.”

High finance, wide impact: The Mulan bond market, which added the Chinese yuan to a basket of four international currencies with special drawing rights for development projects. “We named it for the Chinese woman warrior to signify the World Bank’s focus on gender issues.”

One for all: “Last year, donor countries and the World Bank put

together a fund to assist Jordan and Lebanon, two countries whose public services and infrastructure have been most directly affected by an influx of Syrian refugees. The refugee crisis is a global problem, not just that of a few countries.”

Native tongue: Igbo. “My parents were very particular about us speaking our mother tongue. I also speak French, having lived in Tunisia and Côte d’Ivoire while working for the African Development Bank.”

Of note: Oteh has been awarded the Officer of the Order of the Niger as well as two Chieftancy titles: *Ada eji ejem mba* (in Igbo, “a worthy ambassador of her people”) and *Ada di ora nma*, “a sister her people are proud of.”

Special treat: A Parisian pear tart with ice cream. “A sweet tooth is just one tooth. I have a sugar mouth.”

Good times: Listening to music, playing piano and guitar, dancing with family and friends. “I like musicians such as Angélique Kidjo, Bono, and Bob Geldof who use their music to advocate for the less privileged.”

2017
TRIPS

THE NETHERLANDS BY BIKE & BARGE
SEPTEMBER 8-16, 2017
STUDY LEADER: JAMES SALZMAN

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JUNE 14-29, 2017
STUDY LEADER: **NAOMI ORESKES**



ALASKA AIR SAFARI
JUNE 10-17, 2017
STUDY LEADER: **FRAN ULMER**



INCA TRAIL TREK TO MACHU PICCHU
AUGUST 3-13, 2017
STUDY LEADER: **JEFFREY FROST**



SOUTH AFRICA EXPEDITION
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IMPACT

MARCH 2017

INVESTING IN EDUCATIONAL INNOVATION



H

THE HARVARD BUSINESS SCHOOL CAMPAIGN
THE HARVARD CAMPAIGN

CREATING OPPORTUNITIES TO ENHANCE LEARNING

THE BIG AMBITION BEHIND EDUCATIONAL INNOVATION

If a blueprint existed for educational innovation in the MBA Program, it would be informed by one guiding principle: create opportunities for students to identify and pursue their passions and to make a positive difference in the world.

“The ideal is that on the last day of their careers, our alumni would look back and say, ‘This education enabled me to lead a fulfilling life that I couldn’t have led otherwise.’ That’s the big ambition here,” says HBS’s **Felix Oberholzer-Gee**, the Andreas Andresen Professor of Business Administration and senior associate dean and chair of the MBA Program.

Innovation has been in the School’s DNA since it introduced the case method for management education almost a century ago. Sometimes innovation is about creating bold, new ideas, as happened when the field method was introduced to provide students more hands-on experience with real business challenges. From designing a new yearlong required course on Field Immersion Experiences for Leadership Development to building “hive” classrooms that support the associated teamwork and projects, the first year of the MBA Program was transformed. In the ensuing years the field method has been brought to the Elective Curriculum, with both immersive and extended field course offerings that require students to deepen their understanding of the “knowing” and “doing” of business leadership.

Innovation can also happen on a smaller scale, through gradual but persistent refining and refreshing. The second-year Elective Curriculum, for instance, functions like an R&D lab. In any given year, as many as five to ten new courses are introduced, typically drawing on the leading-edge research of the faculty members teaching them—on topics ranging from data analytics to reimagining capitalism. Even continuing courses incorporate anywhere from 10 to 50 percent new content or more, ensuring that students are engaging with business situations that are both timely and relevant.

Within and beyond the MBA Program, online learning, which has gained a significant foothold at HBS with the 2014 launch of HBX (highlighted in this issue of *IMPACT*), is yet another example of educational innovation. Going forward, the School is exploring ways to creatively integrate its three pedagogical strands—case, field, and digital—so that faculty members are able to draw on each in determining how best to convey tools, concepts, and insights.

Alumni play an integral role in advancing educational innovation at the School. “I’m amazed at how passionate our alumni are about ensuring that HBS is the best it can be,” says Oberholzer-Gee. “Yes, they provide financial resources, for which we are deeply grateful. But we also rely on intellectual stimulus from the alumni community—the insights they share, the engagement they have with our students—that ultimately powers innovation at HBS. We couldn’t do without both kinds of alumni support.”



“Some people might say, ‘Why would you want to change anything?’ But part of the obligation of the School’s leadership is to nudge people—to constantly improve and change and make the experience even better.”

Felix Oberholzer-Gee, the Andreas Andresen Professor of Business Administration and senior associate dean and chair of the MBA Program

LEFT: EVGENIA ELISEEVA; RIGHT: SUSAN YOUNG



What's New? A Few Highlights

EXECUTIVE EDUCATION

Senior Executive Leadership Program (SELP)

SELP is a new yearlong four-modular program designed for experienced senior executives to further their business management and leadership skills. Two in-class modules are held on the HBS campus and two in a host country; the modules are complemented by HBS Live virtual sessions. The first program was conducted in India in 2016, with future programs planned for additional countries.

HBX

Two New Online Certificate Programs

- **Leading with Finance**
The program provides a thorough understanding of the principles of finance—a toolkit for making smart financial decisions.
- **Negotiation Mastery**
Participants are introduced to analytical tools and interpersonal techniques for dealing effectively with different bargaining styles and tactics.

MBA PROGRAM

Startup Bootcamp

This is the first of a new January Wintersession being offered as an elective 10-day immersion program for first-year MBA students. The bootcamp uses a learning-by-doing approach to build skills required to succeed as an early-stage entrepreneur. Other topics such as coding and financial analysis are planned for future programs.



A student team pitches its venture to a panel of instructors, entrepreneurs, and investors on the final day of the Startup Bootcamp program.

DOCTORAL PROGRAMS

MBA Curriculum Exposure

Doctoral students are now asked to take at least two courses from the Elective Curriculum of the MBA Program to give them some experience in the classroom.



HBS FUND
FOR LEADERSHIP & INNOVATION

Alumni annual giving to the HBS Fund for Leadership and Innovation enables the School to continually innovate in its educational programs.

EXPANDING HORIZONS

HBX: REIMAGINING HBS FOR THE DIGITAL AGE

When considering how to enter the digital learning arena, HBS did what any startup would do. It began in 2012 by identifying a challenge: How to merge the unique elements of the HBS learning experience with the latest technology to create a powerful educational opportunity that would reach new audiences.

“We knew we wanted to bring the distinctive features of the HBS classroom—real-world cases and problem solving, active learning, and peer engagement—online,” says **Professor Bharat Anand**, a member of the initial development team who now serves as HBX faculty chair.

To achieve this, the HBX team built two platforms. The first platform, launched in 2014, houses **HBX Credential of Readiness (CRe)** and **HBX Certificate Programs**. CRe introduces students to business fundamentals through three courses—Business Analytics, Economics for Managers, and Financial Accounting—that feature multimedia cases, polls, virtual cold calls, and peer interactions to replicate the dynamics of the traditional classroom. Students complete the coursework on their own schedule while meeting regular deadlines. They are graded on participation and must pass a final exam. Targeted to serious learners, the multi-week program has a remarkable 85 percent completion rate across cohorts. CRe is now offered at educational institutions in the United States and to students around the world. At HBS, CRe is playing an important role in level-setting learning at the start of the MBA program. It replaces the Analytics course for those students without a background in business and economics; more than half of the MBA Class of 2018 completed the program, including a significant number who took it voluntarily.

HBX Certificate Programs include courses ranging from six to eight weeks for individuals and leadership teams. Each course is led by a renowned HBS professor: Disruptive Strategy with **Clayton Christensen**; Leading with Finance with **Mihir Desai**; and Negotiation Mastery with **Michael Wheeler**. Through online case discussions, debates, and assignments, participants learn concepts to apply within their organizations.

The second platform, **HBX Live**, is a virtual classroom housed in a Boston television studio where up to 60 people are engaged in real-time case discussions. The discussion leader—typically an HBS faculty member—sees participants arrayed on a wall of LED screens who interact digitally with the professor and each other through a proprietary interface that facilitates polling and chat, among other features. Launched in 2015, HBX Live collapses geography and enables a range of innovative learning and convening opportunities for alumni and Executive Education participants, among others.

The School has allocated significant resources to develop HBX, including leadership support from donors. While the ultimate goal is for HBX to be self-sustaining, gifts to the HBS Fund for Leadership and Innovation will help further HBX’s extraordinary potential to connect HBS with new audiences in compelling ways.

“Thoughtful engagement—with the material and among students—was at the center of our efforts in developing HBX,” says Anand. “These positive connections spur new ideas and are central to the future of online learning.”

“The concept of ‘digital first’ guided us to distill the case study approach down to its basic tenets and then to reimagine how to express these tenets online.”

Bharat Anand, the Henry R. Byers Professor of Business Administration and HBX faculty chair



▶ ABOVE: EVGENIA ELISEEVA; RIGHT: KATHERINE TAYLOR





The control room during an HBX Live session.

HBX MEETS DEMAND FOR A RANGE OF LEARNERS

“CORE took some of the most intimidating content for a non-business major like me and delivered it in an active, engaging way.”

Sheneka Balogun, CORE graduate, nonprofit manager

“HBX Live felt like a real classroom, or even like an enhanced classroom. The experience is so well designed and supported that I felt like I was sitting in the same room as my classmates.”

Diego Terceros, HBX Live participant, chemical engineering administrator

“You’d pose a question, and in the next 10 minutes you’d have five people chiming in trying to help you out. You get constant feedback and quick replies and answers. It really helps to reinforce the concepts.”

Krishna Rajendran (MBA 2018), CORE graduate

“I have already applied so much of what I learned. My strategy and message for my team and how we communicate with our customers has begun to shift.”

Paige Peterson, participant in Disruptive Strategy certificate program, sales manager

HBS CELEBRATES LAUNCH OF NEW LEGACY SOCIETY



Cindy Whitehead (center), the widow of the late John Whitehead, with event hosts Beth (MBA 1984) and Mike (MBA 1982) Fascitelli.

HBS celebrated the official launch of the new **John C. Whitehead Society** in New York City in December. Nearly 150 alumni and friends gathered at the New-York Historical Society. Attendees from California, Florida, and Massachusetts joined many others from New York, Connecticut, and New Jersey.

Named in honor of the late **John C. Whitehead (MBA 1947)**, a visionary business leader, government official, and philanthropist, the society recognizes alumni and friends who make legacy gifts to HBS by including the School in a will, trust, or other planned gift arrangement.

The event, cohosted by **Beth (MBA 1984)** and **Mike (MBA 1982) Fascitelli**, paid tribute to the life of Mr. Whitehead and illustrated the lasting impact of legacy gifts on HBS. As **Dean Nitin Nohria** said in his remarks, “Very few institutions in the world outlive us. HBS’s future—its success and its strength—depends on the legacy gifts alumni make today.”

There are more than 700 founding members of the John C. Whitehead Society. Learn more about legacy gifts and the Society at giftplanning.hbs.edu.

“Very few institutions in the world outlive us. HBS’s future—its success and its strength—depends on the legacy gifts alumni make today.”

Nitin Nohria, Dean of the Faculty

ALUMNI TAKE COLD CALLS IN NEW YORK CITY

Alumni gathered in New York City in November for a dynamic case discussion—a special benefit for members of the HBS Fund Investors Society. **John Quelch**, the Charles Edward Wilson Professor of Business Administration at HBS, joined alumni for a reception and then led the discussion. The case focused on 23andMe, whose sale of genetic testing kits directly to consumers was challenged by the Food & Drug Administration. Quelch, who coauthored the case, is also on the faculty of the Harvard T.H. Chan School of Public Health.

The Investors Society recognizes leadership annual donors to the HBS Fund for Leadership and Innovation. “The School relies on the generosity of Investors Society members each year to fulfill its mission,” says **Ashley Garrett (MBA 1987)**, who serves as chair of the HBS Fund along with her husband, **Alan “AJ” Jones (MBA 1987)**.

“This event was a wonderful example of expanding efforts to connect members more closely with HBS, top faculty, and new ideas.”

Membership in the Investors Society, which included nearly 1,200 alumni and friends in fiscal year 2016, is based on a donor’s total outright gifts and pledge payments to the HBS Fund in a given year. The fund provides flexible resources that the School can put to use immediately to advance core priorities and harness new opportunities.



HBS FUND
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Investors Society

To learn more, visit alumni.hbs.edu/hbsfund or contact Eric Stoddard, director of annual and reunion giving, at estoddard@hbs.edu or 617-495-6881.

LEFT: DANA MAXSON



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ALUMNI CONNECTIONS

HBS CLUBS (FY16)

102 

Clubs worldwide

21,882 

Club members

1,336 

Annual HBS alumni club-hosted events



Harvard Business School in Africa & Young Alumni Gatherings

- 1 **Abdu Mukhtar (MBA 2001), Ndidi Nwuneli (MBA 1999), and Hetty Ugboh (GMP 7, 2009)** at an alumni reception held at the InterContinental hotel in Lagos, Nigeria in January, coshosted by the HBS Association of Nigeria.
- 2 **Pippa Armerding** (on right) with guests at the Harvard Business School in Africa event held at the Four Seasons Hotel The Westcliff in Johannesburg, South Africa. Armerding was introduced during the program as director of HBS's newly established research office in Johannesburg.
- 3 Alumni from the MBA Classes of 2007–2016 gathered at the London Young Alumni Networking Reception at Hush Mayfair in November.
- 4 **Mark Godfrey (MBA 2016), Brendan McNamara (MBA 2008), and Humbulani Dombo (MBA 2016)** at the Washington, DC Young Alumni Networking Reception held at nopa Kitchen+Bar in November.

To learn more about upcoming events and see photos from past events, please visit alumni.hbs.edu/events.

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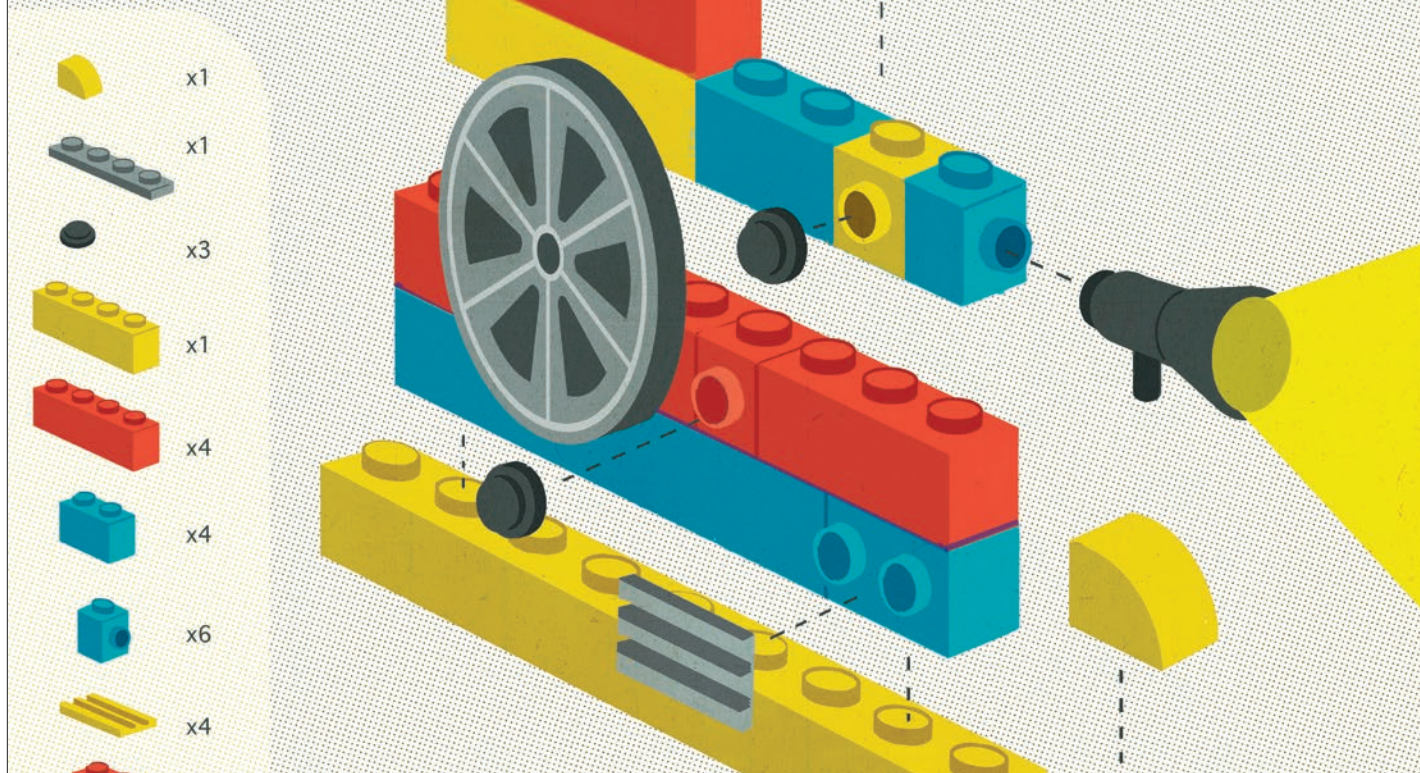
Ideas

NEW IDEA

Blocks Office

How Lego stays on-brand on the big screen

Page 26





NEW IDEA

Lego Stays on Script

How the toymaker leapt to the silver screen—without forgetting its roots

IT SOUNDED LIKE A CYNICAL MONEY GRAB, A 90-minute commercial that no adult would willingly watch. But *The LEGO Movie*, released in 2014, surprised audiences worldwide with its clever, subversive story line, winning over children and adults for a global box office of \$469 million that had everyone involved humming along to the movie's hit song, "Everything Is Awesome." Following on that success, February saw the release of *The LEGO Batman Movie*, with *The LEGO Ninjago Movie* due in September and *The LEGO Movie Sequel* slated for 2019. So what is the secret sauce behind this new franchise? Two alumni on different sides of the process sum it up the same way: be true to the brand's core value of creative, open-ended play.

Movie producer **Dan Lin (MBA 1999)** got the idea for making a Lego movie by watching how his son played with the interlocking bricks and figures: "He

was talking to himself and telling stories. He had a much bigger adventure in his head than what was physically in front of him. I realized it would touch people universally if we could make a movie that captured the imagination and creativity of that experience."

Play is at the center of the Danish company's ethos (the name Lego itself is a rough transliteration of *leg godt*, play well). Lego's VP of marketing, **Michael Moynihan (MBA 1993)**, has been with the company since 1996, long enough to remember its missteps in attempting to broaden Lego's customer base by expanding into product categories such as action figures, arts and crafts, and music toys. "Consumers saw absolutely no connection to the Lego brand," Moynihan recalls. "Ultimately, that led to an extremely difficult period around 2003 and 2004, when we almost lost our financial independence as a private entity." After that, the company refocused its attention on customers who

+SKYDECK

Dan Lin on what it takes to be a Hollywood producer on our new *Skydeck* podcast
alumni.hbs.edu/skydeck

loved Lego for its original emphasis on open-ended play. It wasn't clear if, or how, a movie would ever fit into this point of view.

When Lin first approached Lego, the company hedged, asking him to consider working on a specific play theme like Lego's robot line Bionicle—making *the Lego movie* felt like too big of a risk. "It's a tough conversation when you ask to use a company's main brand, because that affects all of its employees and business," he says. "But the way we play with Lego is a mash-up. My son's Batman minifigure interacts with a *Star Wars* minifigure, and we wanted that style of play to be reflected in the movie itself." Lin's approach, in essence, was true to the spirit of Lego's brand.

According to Moynihan, there's a reason for all of those figures that Lin asked (and was granted permission) to play with in his movie, from Wonder Woman to C-3PO: "Given the way the media and entertainment landscape is evolving, kids are exposed to many different properties and have a strong affinity for characters," he says. Characters like Superman, Scooby-Doo, and Shaquille O'Neal can be a great way to engage new Lego users on or off the big screen, Moynihan adds, with one caveat: "We cannot just

become a role-play toy because many of those already exist. They need to have a building component and exist as a starting point for kids to create their own stories, not just play out what they see on television or in a movie." In every case—including movies—"we have to make sure we have a marriage of the property and Lego play that makes magic for both sides," he says, adding that the process of making the movie reflected the collaboration and team effort that Lego play encourages.

For Lin, making that magic required a deep dive, from visiting the LEGO Idea House in Denmark to attending BrickCon gatherings of adult Lego fanatics. "Getting under the skin of the brand made it much easier to understand the right stories to tell and the right people to bring on to our team," he says. The movie's success was "gratifying on both a personal and a brand level," Lin adds, because it encouraged people to go home, play together, and explore each other's imagination and creativity.

"Making an original, bold movie really boosted Lego sales," says Lin. "By not being an overt commercial, it ended up being the best branded content possible."

—JH

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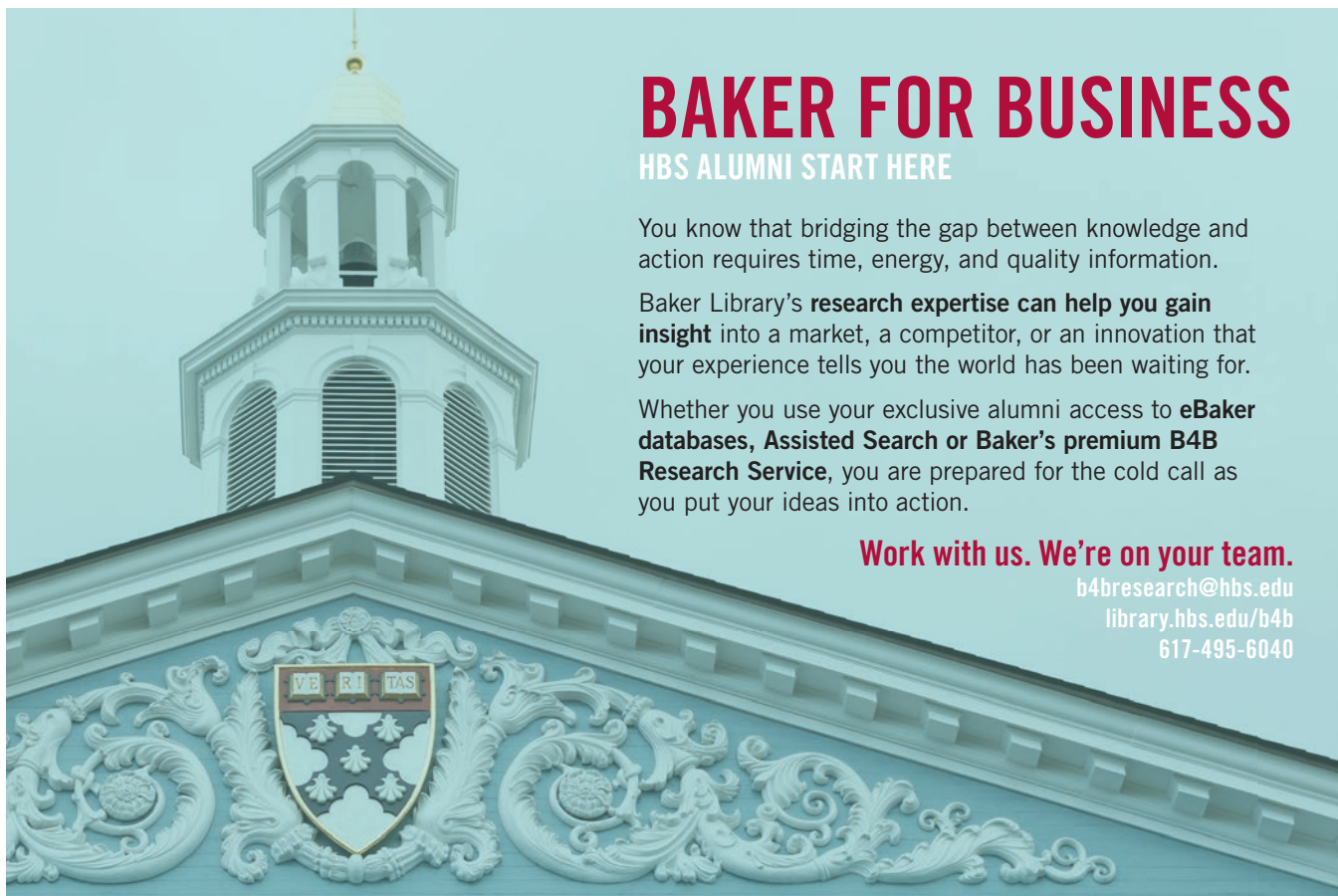
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Moment in the Sun

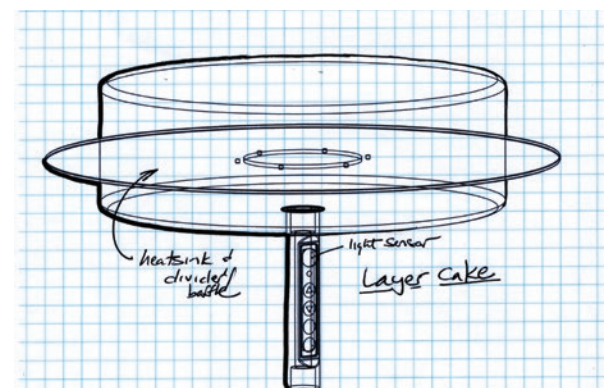
A lighting startup considers the dark side of expansion

ARIO IS A SMART LIGHTING COMPANY IN the Bay Area whose lamp changes light direction and color dynamically throughout the day, promoting better health. The shifts in lighting mirror the patterns and schedule of the sun—which stimulates the body’s circadian rhythms, cuing the production of cortisol during the day to keep you alert and melatonin at night to ready your body for rest. “It’s based on about 15 years of scientific research from NASA, the NIH, and Harvard,” says Ario CEO **Brian Hoskins (MBA 2003)**. “There are a number of health benefits—it helps the body store less fat, helps build the immune system, and reduces stress.”

Hoskins cofounded the company in 2014, launching a Kickstarter campaign in November 2015 that netted Ario more than \$200,000 in 30 days. Ario was originally focused on the consumer market, but when a large hotel chain reached out to express interest, Hoskins began to see the promise of B2B sales in the hospitality market. “They got the value right away,” says Hoskins. “It’s automatic: Your customers are healthier and getting better sleep, and there’s cost

savings through greater efficiency too.” Soon, Ario was installing its lights in Stanford’s student housing. The retail market, in comparison, was capital-intensive, requiring big ad pushes for consumer education about the benefits of Ario’s technology.

Now completing a fundraising round, Ario is seeing the opportunities beyond hospitality. Offices and health care facilities could both offer the company access to huge sectors of the \$80 billion lighting market. —DM



Above: The Ario Lamp parallels the sun’s schedule.



The Question:

HOSKINS DESCRIBES THE COMPETITIVE LANDSCAPE AS “A LAND GRAB.” He’d love to do some pilot projects in hospitals and medical facilities, for instance, but he worries about losing focus on the hospitality business. The other side of that: If those pilots prove successful, they could open up a new core business. And with the market getting crowded—with heavies like Samsung and Philips making smart lighting pushes—it feels like a now-or-never move. “We might be leaving money on the table not just in the short term but permanently,” he says. Should Ario stick to hospitality and own the market, or shine its light on new ground?

The Answers:

IF A LAND GRAB IS EXPECTED, THEN OWNING A SEGMENT or niche with strong attachment will help differentiate the Ario brand as it marches into other segments. I recommend that Ario delay entry into other markets. It should first define a segment, build strong enthusiasts, and then branch out. Just as Under Armour has coined or leveraged the term “connected fitness,” Ario should also try to own and coin a term like “connected wellness,” with the lamp as the starting point and shown as a sleep aid rather than smart lighting.

Ario can assess co-branding the device with players that have established a value proposition around sleep or wellness (e.g., mattress companies or hotels) similar to the Under Armour and HTC partnership for connected fitness devices. With clear ownership of a segment and market, Ario should be attractive to players like Samsung.

—Ngassam Ngnoumen (MBA 2002)

I WOULD THINK INCLUSIVE RATHER THAN EXCLUSIVE. Driving the hospitality market, due to experience, is clear to me. To add some business development in the medical field, which is much more complicated, does not mean that Brian should take his focus away from hospitality. One should make use of the opportunities one is getting and consider every possibility—especially in the mass product markets.

—Flooris van der Walt (AMP 173, 2007)

GO BIG OR GO HOME. INSTEAD OF COMPETING AGAINST the “heavies” in a “land grab,” Ario should position itself as a target for acquisition or as a partner. The heavies and the IPO market value innovative tech and business models much more highly than a sales channel to a single segment. Ario should not only jump into

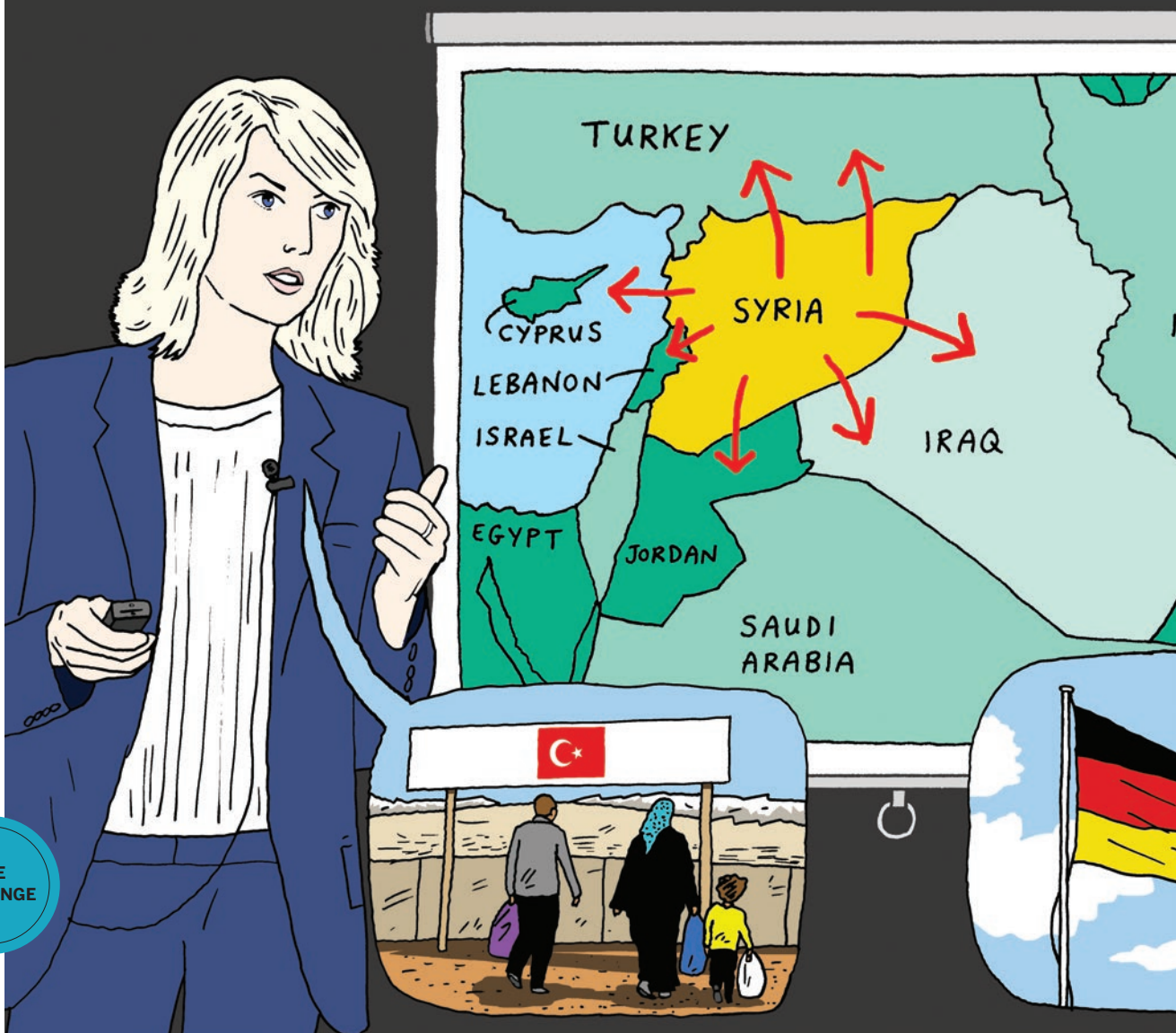
health care, it should seek out other markets to prove and improve itself, and continue to innovate so it can widen the moat. —Yen-Ping Shan (TGMP 10, 2002)

DISRUPTERS REST AT THEIR OWN PERIL! ARIO IS WHAT Mr. Wonderful of *Shark Tank* would call a “cockroach” relative to the behemoths of Samsung and Philips. If you remain focused on one market segment, they will figure out a way to squish you (most probably by lowering prices and your margins). Ario needs to continue innovating and penetrating new markets even as it seeks to protect its new home turf. Besides, running a couple of experiments should not be that much of a bandwidth killer. —Jacob Navon (MBA 1984)

IT’S CRITICAL TO CHOOSE ONE AND “OWN” IT. WHICH one to choose is largely a function of the exit strategy. Owning one specific market will virtually guarantee that the company will be worth something to someone. On the other hand, a strategy that calls for broad but shallow market penetration is likely to produce an inconsequential valuation. If the intention is to hold the company for a long time, and the tolerance for risk is high, then one might test other market opportunities simultaneously. —John Grabski (OPM 29, 2000)

WHEN YOU LOOK AT THE LIFE OF SUCCESSFUL STARTUPS, there is a distinct pattern: At the early stages, they focus and allocate most of their resources for the activities where the growth comes from. When you have a great product or service, it could be very tempting to target a larger market (multiple segments) than a relatively smaller one. However, large markets require large resources to penetrate. Brian should keep in mind that knowing what not to do is as important as knowing what to do. —Ilhan Demiriz (GMP 16, 2014)

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THE EXCHANGE

Talking Refuge

Professors Kristin Fabbe and Gunnar Trumbull on the current refugee crisis—and the next one

SINCE THE OUTBREAK OF CIVIL WAR IN 2011, 4.9 million Syrians have fled their country, and another 6.6 million are internally displaced, according to the UN Refugee Agency. To better understand the human, political, and economic impacts of this refugee crisis, Assistant Professor **Kristin Fabbe** conducted a large-scale survey of Syrian refugees in Turkey, and Professor **Gunnar Trumbull** coauthored a case on Europe’s response. “Refugee flows are going to be a growing issue as we see an increasing number of weakened states, in part driven by climate change,” Trumbull says.

—AW

How is the Syrian refugee crisis different from those we’ve seen in the past?

Kristin Fabbe: People just didn’t expect the Syrian refugee crisis to go on as long as it has and to have reached the magnitude of displacement that has occurred. When we asked Syrian refugees in Turkey [in early 2016] how long they thought they were going to be gone, most of them said three to six months. Now, most of them have actually been displaced for three years.

But if you ask the same people whether or not they would have stood behind the principles of the uprising against the Assad regime knowing all the suffering that they’d go through, over 62 percent say yes. They stand very firmly behind the desire to institute a more democratic and open system in Syria.

Gunnar Trumbull: Seen from the perspective of receiving countries in Europe, two things have been different.



First is the scale: Europe hasn't seen this scale of refugee crisis since the aftermath of World War II. Second, from the late 1990s, the EU has been putting in place common border policies and a common asylum system, but this new institutional infrastructure has not been tested before. People who manage refugee flows are watching very carefully how Europe responds, because they see it as setting a template for how to manage refugee flows in general.

What are the economic impacts of a large refugee flow?

GT: The economic research on this is not totally solid. Eventually, we think that in terms of tax burden and GDP output, accepting refugees is probably good for a country. That was part of Chancellor Angela Merkel's message to Germany: We need these people to plan for future growth.

Economic migrants tend to be of the greatest benefit because they come with skills, and they're mostly

young men or young women who are ready to work. What's unusual about flows that come out of war settings is the refugees are mostly there to get away from a war, not to find a job.

KF: In our survey, we asked about people's professions in Syria. The number one was housewife. If these refugees are coming to Turkey without a breadwinner, so to speak, they're going to be even more dependent on services.

GT: My conclusion about Europe—and especially the actions of Sweden and Germany—is that officials are looking for any argument they can make to sell the policies to their domestic constituencies. But in the end, they ended up accepting so many refugees just because it was the right thing to do. It was a humanitarian crisis they had to respond to, not some great economic opportunity.

If this refugee crisis is going to be instructive in the future, what lessons have we learned from what has happened thus far?

GT: The big threat and opportunity here is Afghanistan. Syria is a relatively small pool of migrants. In Afghanistan, you have a potentially enormous pool of refugees who could arrive at any moment in Europe.

One of the things that Europe is starting to understand is it has to have much more of a presence in North Africa and the Middle East, and to make deals with these countries that they hope will stabilize the region and stabilize refugee flows.

KF: One thing Turkey is coming to terms with is the fact that it can't insulate itself from diversity as it has tried to do over the course of the 20th century. The state is going to have to do a better job of dealing with diversity, whether it happens to be with its own Kurdish population or with new Arab migrants or with refugees who plan to settle. Since the Syrian crisis you see a lot of debate going on, both in the media and in higher levels of government: How as a country should we deal with diversity? And I think this is actually a really good conversation for Turkey to be having. Hopefully it will be allowed to continue.

GT: In some ways, exactly the opposite is happening in Europe. Western Europe has long thought of itself as deeply multicultural and able to assimilate any degree of diversity. What European politicians are realizing is that the tools they had for assimilation and building a multicultural society are really under deep stress now, and so you see the rise of the political right in Europe as a pushback against greater diversity. Even if this refugee flow stops, I think that feature of European politics is not going to go away.



Lost in Translation

IN AN INCREASINGLY GLOBAL BUSINESS WORLD, ENGLISH IS the lingua franca that tethers companies and their investors together. Executives without a deep fluency in English could be costing their companies more than they realize. According to a recent paper coauthored by Associate Professor **Gwen Yu**, subtle language errors made by nonnative speakers of English in investor conference calls can be linked to literal dollars and cents in the marketplace.

When top leaders fumbled with the language as they led impromptu Q&A sessions in conference calls, their companies were more likely to see diminished intraday trading volumes and more modest price movements in stocks compared with calls led by more fluent speakers. “Executives typically speak English quite well when they’ve had time to prepare and rehearse,” says Yu. “But when they don’t have a script to work off of, we could see the effect of language barriers.”

Yu and her coauthors arrived at this conclusion after looking at spontaneous Q&A sessions in more than 11,000 conference call transcripts from firms based outside the United States. Using sophisticated software, the researchers tracked both grammatical errors and the use of “non-plain” English: executive-speak, technical jargon, and multisyllabic words. A single standard deviation increase in non-plain English, for example, led to a 5.66 percent reduction in intraday trading volumes, even after controlling for the content of the call.

Their findings suggest that this linguistic imprecision can lead investors to feel less confident about their own interpretations of the information presented—and to become less likely to react by buying or selling the company’s stock. The effect of murky language was even more pronounced in calls with firms that have mainly native English-speaking investor bases.

For Yu, the lesson is obvious: Crystal clear communication is essential for CEOs and other leaders who are talking with their investors. “So much communication is becoming real-time these days, thanks to social media, Twitter, and other [platforms],” she says. “Firms must have a strong communications strategy, because they aren’t always going to have the luxury or time to prepare, and simply translating your message won’t be enough.”

—ERIN PETERSON

“The Capital Market Consequences of Language Barriers in the Conference Calls of Non-U.S. Firms,” by Francois Brochet, Patricia Naranjo, and Gwen Yu, HBS Working Paper.

Ideas

Perfect Pitch

Is smarter deep brain stimulation the next medical frontier?

ROGER FRISCH, A CONCERT VIOLINIST WITH the Minnesota Orchestra, sees his instrument as an extension of himself—each time he pulls the bow across its strings, the vibrations seem to echo through him. So in June 2009, when Frisch began to feel tremors in his bow whenever he practiced, he immediately knew that something in his body was out of sync. He was diagnosed with essential tremor, a neurological disorder that causes involuntary and rhythmic shaking of the arms or hands. For someone whose livelihood depends on a meticulous attention to tone quality, it was nothing short of a nightmare.

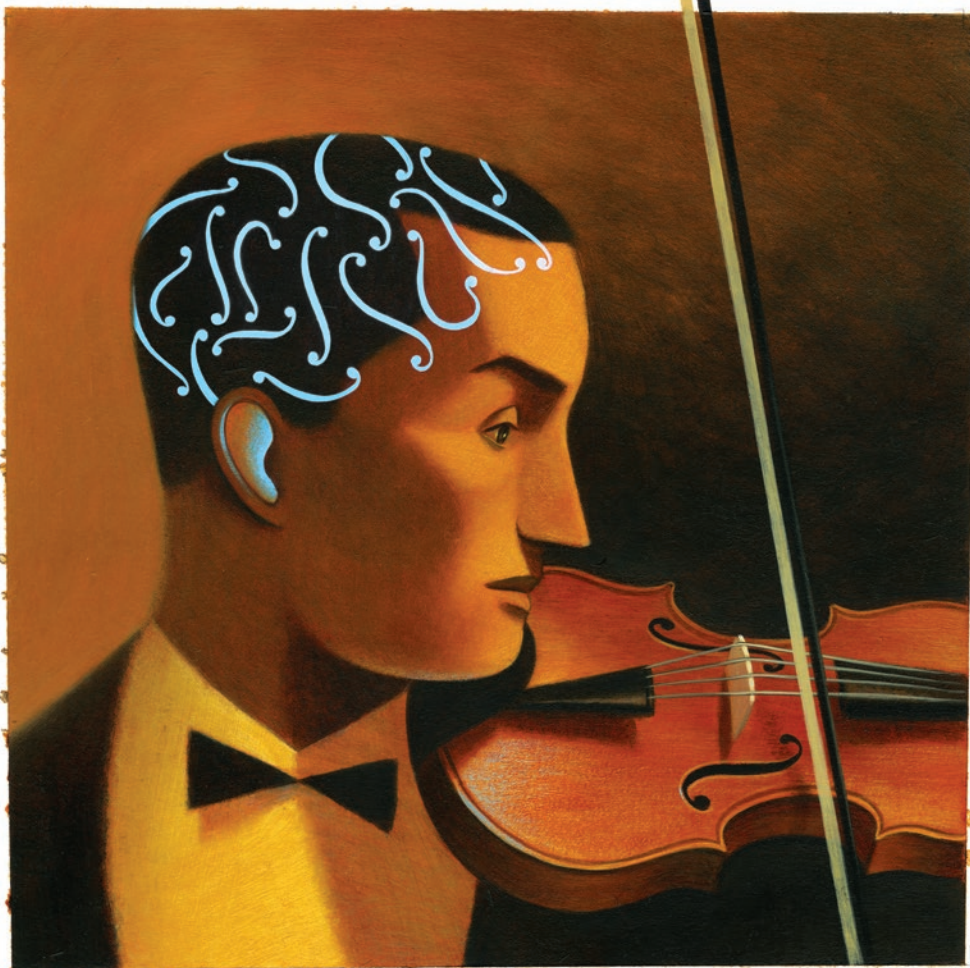
After exhausting other treatment options, Frisch chose a radical alternative: having tiny, needle-like electrodes placed inside his brain.

Those electrodes are part of a device called Harmoni, a deep brain stimulation and measurement tool being developed at Minnesota’s Mayo Clinic. **Kevin Bennet (MBA 1980)** chairs the hospital’s 102-year-old engineering department, where some of the first machines designed to keep patients alive during open-heart surgery were developed. Today, Bennet oversees a team of 67 programmers, technologists, and engineers to tweak preexisting medical instruments or develop entirely new medical devices.

The general deep brain stimulation procedure is now established practice: For over a decade, neurosurgeons have placed electrodes in the brains of patients suffering from neurological-based movement disorders. Those electrodes deliver pulses that spur the release of neurotransmitters, the chemicals that stimulate the neurons that carry messages throughout the brain.

But working under Bennet and his collaborator, neurosurgeon Kendall Lee, a team of researchers and engineers at Mayo’s Neural Engineering Laboratory began to make dramatic improvements to the technology behind the treatment. Instead of requiring constant tweaking like a typical deep brain stimulation device, Harmoni’s sensors work to keep the brain in tune automatically, recalibrating whenever the cells stop communicating appropriately to maximize the therapeutic effects. The electrodes are placed inside the brain at the precise spot where the issue originates and communicate to a wireless monitor that tracks the neurotransmitter changes to make real-time adjustments in the brain stimulation.

This kind of targeted approach gives Bennet hope



This targeted approach gives Bennet hope that Harmoni can benefit not only people suffering from movement disorders, but also a whole class of psychiatric patients.

that Harmoni can benefit not only people suffering from movement disorders, but also a whole class of psychiatric patients who, until now, had few options beyond prescription drugs to help lessen the effects of their disorders. “If you’re not feeling well, pharmaceuticals are the primary choice,” says Bennet. “But in most cases they’re not really a miracle” but a temporary reprieve. Bennet notes that while millions of patients suffer from psychiatric disorders, many don’t know that deep brain stimulation is a treatment option. He hopes that a device like Harmoni could provide drug-free therapy for people suffering from illnesses like depression, addiction, obsessive-compulsive disorder, or Tourette syndrome, with its exacting approach alleviating concerns about side effects from medications or drug dependency.

Frisch’s ailment was a perfect example of the procedure’s precision: There were a few cells in his brain that were responding in unison—the effect akin to a record skipping, playing the same note over and over again. Bennet and his colleagues needed a way to resume the melody.

There was only one hitch: The patient needs to be awake during the surgery to ensure that the electrode

is placed in the exact area being affected. So on the day Frisch was in surgery, he played a special violin that Bennet’s engineering team had created, with a bow that could detect his tremors. In what was likely the most bizarre concert Frisch has ever played, he performed in the operating room as doctors tinkered inside his brain. All the while, Bennet and his team monitored the tremors as neurosurgeon Lee inserted the electrodes, making sure that each found its target. The procedure was a success; Frisch was practicing on his violin the day after the surgery.

While Bennet admits that researchers are only now beginning to understand how such neuromodulation therapies work within our brains, he also notes that Mayo aims to continue to test Harmoni’s efficacy on issues like spinal cord injuries, dementia, and Alzheimer’s disease. “We’re in discovery mode,” he says. He doesn’t see electrical treatment techniques—also known as electroceuticals—pushing traditional pharmaceuticals out of the market in the foreseeable future. “But I do think we’ll soon see a world where electroceuticals will be a viable solution.”

—JANELLE NANOS



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ASK THE EXPERT

Capital Architect

Building a dynamic private sector economy from scratch

David Brunell (MBA 1962) IS A MASTER AT MAKING markets. For 25 years, he has transformed emerging economies from state control to free enterprise in Asia, Africa, and Eastern Europe—more than 20 countries in all, including Zambia, Vietnam, and, most recently, Myanmar. “Reforming economic infrastructure and privatizing state corporations are rarely linear or simple tasks,” Brunell notes. “It’s more orchestral, symphonic, and elegantly complex.”

With high-profile transitions in Cuba, Ukraine, and Iran grabbing headlines—and more bubbling up around the globe—we asked Brunell to answer your questions and briefly break down what it takes to build market economies in the modern era.



How should a government communicate with and motivate its citizens to make them agents of change to a market-driven economy?

—Jaime Fortuño (MBA 1988)

HUMAN MOTIVATION FOR SUPPORTING OR CATALYZING change only comes from within. We can’t “make” people’s behavior or “mandate” mindset. Citizens must have reason to care, want, and believe in the change agenda—and to trust the process and people leading it. Government leadership needs to formulate (and commit to) engagement mechanisms for economic governance—which builds citizen confidence in their role as partners. To ingrain legitimacy in Zambia, for instance, a cabinet-level executive Privatization Agency was created under a board with equal representation of government, business, and social leadership. Similarly, we mandated that respected Zambian private or civil sector leaders chair all negotiating transaction teams.

What consideration do you give to the spiritual and ethical components of building a national economy?

—Stottler Starr (MBA 1966)

VERY HIGH CONSIDERATION. SPIRITUAL AND ETHICAL factors are often viewed as separate “silos,” but these core values pervasively shape, bind, and energize the economic culture. Long-term policy and growth must emanate from—and reflect—the aspirations, character, spirit, and cultural DNA of all stakeholders. This means that the “process” of economic governance is as vital to success as the policy—and requires prioritizing things like stakeholder engagement, meaningful participation, openness and transparency, and common interest over special interests and corrupt practices.

There are many examples of economic troubles correlating with ethical and spiritual lapses, including Zimbabwe, where prolonged violations of human rights and citizen participation have rendered the masses economically impotent. Several national economies in the Balkans, Central Asia, and the Middle East have been gutted over opposing spiritual identities and ethical codes.

Ethics and spirit are all too often overlooked and underestimated in our digital-driven, metrics-defined, “quant” world—yet they are at the heart of it all.

When regimes turn to being more totalitarian on the political front, the urge to take greater command and

Brunell spent five years helping Vietnam transition to a market economy, instituting government transparency measures and a national competitiveness index.

+SKYDECK
Brunell offers an inside look at Myanmar’s historic transition on our new Skydeck podcast alumni.hbs.edu/skydeck

control of the underlying economy frequently follows. Does this current global environment make it harder for Myanmar to achieve its transition?

—Jacob Navon (MBA 1984)

TO THE CONTRARY, MYANMAR'S TRANSITION IS MADE easier by current international trends—including the world's increasingly integrated trading system, higher transnational standards of finance and investment, acknowledged failures of command economies, and heightened concern for human rights, among others.

Locally, Myanmar was facing a debilitating and protracted isolation; degrading infrastructure; a restless, uneducated, and ill-equipped population; and exhausted resources. The military leaders considered the daunting prospects of simmering border and ethnic instability, continued castigation, an imprisoned and widely revered charismatic leader open to reconciliation, and the possibilities of Chinese dominance versus global or Western engagement. The regime's sober assessment tipped the choice for negotiated political reconciliation, global engagement, and democratic economic governance.

Nigeria is moving away from oil, and agriculture is the main alternative because it contributes 60 percent of the GDP. Are there any lessons from other countries that have gone through this? How can Nigeria revive its economy through agriculture?

—Suleiman Yakasai (PLDA 22, 2016)

NIGERIA TYPIFIES THE PROBLEM OF THE “RESOURCE curse”—with seemingly intractable challenges and complex approaches. There isn't a lack of ideas: Countless reports sit on shelves gathering dust. Making change happen is ultimately a multifaceted “people” challenge, process, and solution. As in the corporate world, the difference makers are the intangibles: galvanizing vision, empowering leadership, shared value creation, strategic execution, and beneficial stakeholder participation.

Successfully replacing the oil resource curse requires several factors, including unwavering political will, market and trade focus, and access to finance—all complemented by technical assistance and training. That aid can be provided by myriad organizations, ranging from development agencies and agriculture companies to impact investors and venture capitalists.



A Healthy Profit

LUXURY CRUISE COMPANY ROYAL CARIBBEAN'S CONNECTION TO public health might not be immediately apparent. “People don't think of it as a health company, obviously,” says Professor **John Quelch**, coauthor (with research associate Emily Boudreau) of *Building a Culture of Health: A New Imperative for Business*. “But if you have a norovirus outbreak on a weeklong cruise with 5,000 people, and that vessel has to port and the cruise is canceled, that loss will cost Royal Caribbean a fourteenth of its annual profits.” Focusing on consumer health is one of four ways that Quelch says companies can affect public health, along with concentrating on the well-being of its employees, its community, and the environment. The principles can help the bottom line, too, offering improvements in reputation, retention, and revenues. Here are a few ways Royal Caribbean puts each into action. —DM

CONSUMER HEALTH

Royal Caribbean created an eight-step Outbreak Prevention Plan to stop gastrointestinal illnesses, which includes screening guests and crew prior to boarding. “A cruise line cannot afford to shortchange cleanliness,” says Quelch.

ENVIRONMENTAL HEALTH

“All of their cruise ships have an internal water recycling system that minimizes discharge into the ocean,” says Quelch. New energy efficiency initiatives also saw their greenhouse gas footprint drop by 19 percent between 2005 and 2012.

EMPLOYEE HEALTH

The crew is offered medical check-ups, and more than 90 percent of employees participate in yearly health fairs that provide free screenings and educational resources.

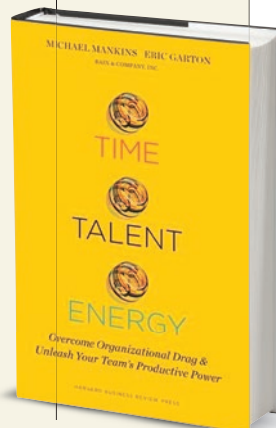
COMMUNITY HEALTH

“Royal Caribbean donates a lot of used furniture and household goods in the ports where they call,” says Quelch. “They'll also buy goods and services in those port cities to put money back into the local economy.”

EXCERPT

“[Just] as organizations that invested financial capital more wisely than their rivals performed better in the past, the companies that do the best job of managing time, talent, and energy are the ones that win today’s competitive races. Netflix, for example, didn’t get where it is just because it had a better business model than Blockbuster. It reached the top and has stayed there because it attracts, retains, and effectively utilizes many of the best people in the business. **‘The best thing you can do for employees—a perk better than foosball or free sushi—is hire only “A” players to work alongside them;’** wrote Patty McCord, the company’s chief talent officer from 1998 to 2012. ‘Excellent colleagues trump everything else.’ Netflix hires ‘fully formed adults,’ self-sufficient people “who feel responsible for the company, knowing that they will exercise discretion and responsibility.” The company has no vacation policy and no travel expense policy. Nor does it have formal reviews, which it believes create unnecessary bureaucracy. Instead, Netflix fosters continuous, open, and honest conversations about performance. The strength of the company’s talent has enabled Netflix to shift its business model and strengthen its leadership position over the last ten years.”

—From *Time, Talent, Energy: Overcome Organizational Drag and Unleash Your Team’s Productive Power*, by Michael Mankins and **Eric Garton (MBA 1996)**



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A SUMMIT HIGHER THAN EVEREST





In 1931, MBA student Terris Moore took a leave of absence from HBS to venture to the remote western edge of China—one of the few remaining “blank areas of the map.” His objective: to scale the great Miinya Konka, height unknown

BY APRIL WHITE



I THE FIRST TIME **Terris Moore (MBA 1933, DCS 1937)** saw the magnificent Minya Konka was in March 1930. He was sitting in the cozy library of the Explorers Club in Manhattan. Although the club had only recently moved into its eight-story home on West 110th Street, the room already had an air of timelessness. The wood-paneled walls were lined with portraits of great American adventurers and the trophies they had brought back from the edges of the earth. Men in bespoke suits with pipes reclined on leather sofas around the warmth of the fireplace.

Only 22 and a first-year student at HBS, Moore—Terry, to his fellow mountaineers—was not yet a member of this illustrious society. That honor was reserved for those who had “added to the geographical knowledge of the world,” true explorers like the one sitting next to him: Allen Carpé. Carpé was a World War I veteran and an accomplished research engineer with Bell Telephone Laboratories whose exploits included the stormy first ascent of Mount Logan, Canada’s highest peak. The two men bowed their heads over a new book, *Trailing the Giant Panda*, an account by two of Teddy Roosevelt’s sons, Kermit and Theodore Jr., of their experiences in western China and eastern Tibet. The onion-skin map of their journey tucked behind the last page caught Moore’s attention. He traced their path for 500 miles to the north-east corner of the page and paused.

“Thirty thousand feet?” Moore asked in astonishment. “Thirty thousand feet?” There, marked on the map with the same attention given any other summit was an indistinct sketch of a mountain, labeled Mount Koonka, height 30,000 feet above sea level. A curly question mark followed the measurement. “Is there really any chance Mount Koonka could be *that* high?” Mount Everest—then considered the world’s highest peak—had been measured at 29,002 feet above sea level; it had never been successfully scaled.

Carpé was skeptical. He knew there were still unsurveyed mountain ranges in the world—“blank areas on the map,” as he called them. In fact, he was just now planning an expedition to a blank area of southeast Alaska. But a summit higher than Everest? Carpé flipped through the book to learn more about the mountain better known as Minya Konka, but the Roosevelts did not elaborate. He and Moore then searched the library’s other resources but found no definitive answer there either. An article from the previous month’s *National Geographic* hinted that another mountain in western China, which the magazine called Amnyi Machen, might also rival Everest.

It was the question mark that fascinated Moore—that kept drawing him back. For several years he had dreamed of climbing Everest, but it wasn’t the mountain’s height alone that entranced him. It was the unknown.

I MOUNT KATAHDIN, MAINE’S highest point, wasn’t quite visible from the shores of Lake Onawa, but Moore had always known the mountain was there. Though raised in a wealthy community in southern New Jersey, Moore spent most summers at his father’s family camp near the lake in the wilderness of central Maine. When his parents divorced—an unusual occurrence in 1920—12-year-old Moore took refuge in exploring those primeval forests.

The summer after he turned 16, Moore hatched an idea: He would hike to Katahdin, 35 miles away, by himself. He planned carefully, making lists of provisions and collecting rough maps of the untracked land, which would later become the last miles of the Appalachian Trail. He set out on the morning of August 6, 1924, returning four days later. He didn’t reach Katahdin—his diary offers no explanation for the change of plans—but he would forever view the trip as his “emancipation.”

Moore thrived on the freedom. A few years later, while attending Williams College, he set off to canoe Maine’s winding Allagash River, all the way to the Canadian border—a “thrilling education.” And the summer after that, he bought a Model T for \$50 and drove from New England to British Columbia. There, he sold the broken-down car for train fare and rode the boards back home.

In February 1929, Moore returned to Katahdin. Now a tall 20-year-old college senior with a blond cowlick, he was ready to climb the mountain. The sky was cloudless and the temperatures near zero as Moore and his friend Lewis Thorne skied through the heavy forest. At the tree line, they abandoned their skis and scrambled upward. They reached the summit—5,267 feet above sea level—at twilight and raced nightfall back down.

The exhilaration of that climb hooked Moore on mountaineering. At the time the sport was an exclusive one of well-heeled explorers, not endurance athletes, and many untouched peaks beckoned. Moore and Thorne’s adventure to the top of Katahdin was itself one for the record books, the first-known winter ascent of the mountain. Moore was well suited for the gentleman’s hobby—lean and strong, with an unbridled curiosity—and for the mountaineering community, a convivial and competitive group.

Only a few months after that first climb, Moore and Thorne joined Moore’s father, a zoologist at the California Institute of Technology, and his stepbrother on an expedition to Ecuador to climb two Andean volcanoes. The ice-crowned Sangay still threatened to spew lava; no one

This article relies upon Moore’s own published and unpublished accounts; letters between Moore and Hincks from the archives of the University of Alaska Fairbanks; descriptions from his family and other climbers; and other historical sources.



THE MOUNTAIN MEN: (1) Terry Moore, just before the final ascent of Minya Konka in October 1932. (2) Clockwise from top left: Lamb Expedition members Dick Burdsall, Jack Young, Moore, Lewis Thorne, and Art Emmons.

+SKYDECK

Tom Vogl (MBA 1998), CEO of The Mountaineers, explores the past, present, and future of the adventure business on our new *Skydeck* podcast alumni.hbs.edu/skydeck

had ever stood on its rim, 17,464 feet above sea level. After 18 days of trekking through the rains, they reached the blinding sunshine of Sangay's snow line. It took three attempts to cut a path into the frozen slope to climb the remaining 2,500 feet, but on August 4, 1929, Moore and his father stared down into the never-before-seen crater. Three weeks later, Moore led the second successful ascent of the dormant Chimborazo, once considered the tallest mountain in the world. In the process he logged the highest overnight stay in the Western Hemisphere, a sleepless six-degree Fahrenheit night at 20,300 feet above sea level.

Moore's intrepidity made him a celebrity in mountaineering circles when he moved to Cambridge in the fall of 1929 to attend Harvard Business School. Moore was invited to join the Harvard Mountaineering Club and the American Alpine Club, where he first met Allen Carpé in January 1930. Several years earlier, Moore had read in *Appalachia* magazine about Carpé's failed attempt to summit Alaska's Mount Fairweather; it had inspired Moore's own explorations. Now Carpé invited Moore to join him in the first ascent of Alaska's Mount Bona that summer. As a business school student, Moore was expected to spend the summer working for a company. He convinced his advisor that because of Carpé's work studying high-altitude cosmic rays for Bell Labs, the expedition fit the School's requirements.

Following the successful expedition to the top of Mount Bona, Moore requested a leave of absence from the School to join Carpé and two other mountaineers on their second attempt at Mount Fairweather. As his classmates finished their studies, Moore departed for Alaska in March 1931 to prepare for the June climb. But the men did not expect the fierce late spring blizzards they encountered. As the snow piled up outside their tents 9,000 feet above sea level, the men faced a tough decision: How long could they safely wait for the weather to clear to continue to the summit, 15,325 feet above sea level? Only a few days of food and, more vitally, heating fuel remained. To give Carpé and Moore a greater chance for success, the other members of the team decided to descend. The storm lasted four more days. When it was finally over, the men crawled through the deep, fresh snow in the unending Alaskan twilight. Just after sunrise on June 8, they reached the elusive summit.

Those who knew Moore were not surprised by the tenacity that propelled him from HBS to the top of Mount Fairweather. For Moore, one college friend would later say, "to hatch an idea [was] to act on it."

III

ON THE EVENING OF Saturday, November 28, 1931, more than a year and a half after that day in the Explorers Club library, 23-year-old Moore stood

on the deck of the *Tai Ping Yang* as the freighter sailed out of New York Harbor bound for Shanghai. He was joined in what he would later call an "impractical" and "romantic" adventure by Gene Lamb, a veteran explorer who carried the symbolic red, white, and blue Explorers Club flag as the leader of the expedition, and seven others, including his dear friend Lewis Thorne. To Moore's great disappointment, his climbing companion Allen Carpé declined to join the lengthy trip, citing family and professional responsibilities. The Lamb Expedition was to be a two-year-long tour through China to Tibet to map the region, collect specimens of flora and fauna for study, and record the voice of Tibet's Grand Lama. Moore would then lead an ascent of Amnyi Machen, better known as Machin Shan, which the explorers now believed to be the most promising rival to Everest.

A year earlier, *National Geographic* had published Joseph Rock's account of Minya Konka, most accurately pronounced "gungka" or "goong-ga." The widely traveled botanist had first spied the triangular massif in 1928 through field glasses from a distance of more than 100 miles, towering over the peaks that surrounded it. The sight made him gasp. He immediately planned another expedition to map the range, returning with dramatic close-up photos of Minya Konka's snow-capped heights. The images had been as inspiring to the adventurers as the caption was deflating: "This magnificent 25,600-foot peak" it read in part, slicing more than 4,000 feet off the Roosevelts' mountain. With that, Moore and his fellow explorers had turned their attention to Machin Shan.

But there remained a question mark atop Minya Konka, the "great snow mountain" considered sacred by the Tibetan Buddhists who lived in its shadow. The published height did not match Rock's estimates. A second expedition that same year, led by a Swiss geologist, had measured the mountain at slightly more than 25,000 feet above sea level, and *National Geographic* had chosen this more conservative figure. Rock's measurement methods had been crude—a pocket compass and a barometer—but his message was one an explorer could not easily ignore. He had cabled the National Geographic Society from the base of the mountain: "MINYA KONKA HIGHEST PEAK ON GLOBE 30,250 FEET. ROCK."

As the map of the world had shifted while the Explorers Club expedition formed, so had its geopolitics. At home, any hope that the American economy would rebound after Black Tuesday had disappeared as wages declined and unemployment grew, plunging the nation into what would become known as the Great Depression. Halfway around the world, tensions between China and Japan exploded. On September 18, 1931, less than three months before Moore's departure, the Japanese Army invaded northeast China, the first incursion of an occupation that would last until the end of World War II.

Life had changed for Moore, too. When he had joined the expedition as its lead mountaineer, he was single. His romance with Katrina Hincks, a Vassar grad now living in New York, had ended abruptly, and that, along with dim prospects for the career in publishing he had envisioned when he enrolled at HBS, made it easy to accept the invitation; he extended his leave of absence from the School. As the date of departure had approached, however, he and Hincks reconciled. They were now engaged to be married, and Moore had begun to worry about a future beyond mountaineering.

Hincks was not on Pier 38 as the *Tai Ping Yang* faded into the horizon. “Please don’t think I had anyone else down to see me off,” Moore begged. He wrote her frequently, filling page after page with his sprawling script, though the opportunity to send and receive mail was rare. He shared gossip about the expedition team, reviews of the books he was reading, declarations of love in several languages, and carefully detailed but ever-changing plans for their future together.

“If I had you at the time this opportunity was offered [to] me, I never in the world would have accepted it,” Moore promised Hincks when he arrived in Shanghai in January 1932, after more than a month at sea. “Having you and the responsibility of taking care of you and keeping you happy, I have no business whatsoever setting out on a venture which was quite so uncertain and risky.”

IV. “I STARTED OUT TO CLIMB THE highest mountain in the world,” Moore wrote to Hincks in June 1932, “and landed in the lowest law court in the land.” Moore was again in Shanghai; in the five months since his arrival in China, he traveled only as far as Peking, 144 feet above sea level. First, the expedition had been waylaid by the outbreak of war when the Japanese attacked Shanghai. In the city’s International Settlement, under the control of Britain and the United States since 1863, all able-bodied men were encouraged to join the battle. Moore and several others signed up and were issued bandoliers, rifles, and bayonets. They stood watch over the settlement and witnessed violent clashes between the Japanese and Chinese armies along the banks of the Suzhou Creek but were not part of the fighting. Ten days later, the danger to the International Settlement passed, and Moore was once again a civilian, ready to continue with the planned expedition. Then dissension broke out among the explorers.

Months earlier Moore had grown suspicious of the expedition’s leader, Gene Lamb, so much so that he had devised a code to secretly communicate his concerns to Hincks by telegram. Moore believed that Lamb was a crook who had committed fraud during his previous visits

to China and had misrepresented his connections there. Now, the explorers needed permissions to travel through the country, and Lamb could not obtain them. Lamb planned to continue on illegally, but Moore and several of the others refused to do so, and the lawsuits began. Moore lost most of the \$6,000 he had invested in the trip, paid from a sizable trust fund set up by his grandfather, but he reasoned that much of the money had come from securities, and it was “much better to have sold them and lost the money in this adventure out here, than to quietly watch it melt on the stock exchange.”

The expedition was over. Lewis Thorne had already departed for the United States, and Moore considered doing the same. Hincks had asked him to come home—“job prospects are brighter” she had wired him in May—and he had finally settled on a plan to finish his MBA and pursue a doctorate at HBS. It would give him options, he said. “I can support you by teaching, or if the education system goes broke, by ‘cogwheeling’



“There stood Minya Konka, clear and near and wonderfully huge against a background of cobalt sky. We knew it was a mountain indeed.”

in a publishing house, or if they all go broke, by being a trapper in the north woods.”

But Moore had promised Hincks again and again that this expedition would be his last, the end of “the traveling and knocking about part of life,” and “selfishly,” he confessed, he could not give up on the adventure quite yet. “I really ought to do SOMETHING out here to properly impress the Business School people before coming home,” he wrote. After trying and failing to join a British mountaineering team headed to Everest, he decided he would undertake his own expedition through China.

Moore concocted a plan to travel 1,200 miles up the Yangtze River toward Tibet with three members of the original Lamb Expedition: Art Emmons, a Harvard undergrad and an experienced climber; Dick Burdsall, an engineer with the necessary skills to measure a mountain; and Jack Young, an American of Chinese descent who had traveled with the Roosevelts. “We will pick a good, safe mountain, of course, and climb it,” Moore pledged to Hincks, but he already had a destination in mind: the summit of the mysterious Minya Konka.



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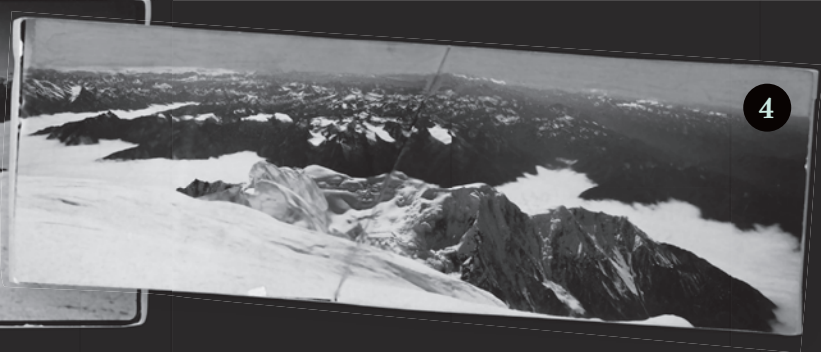
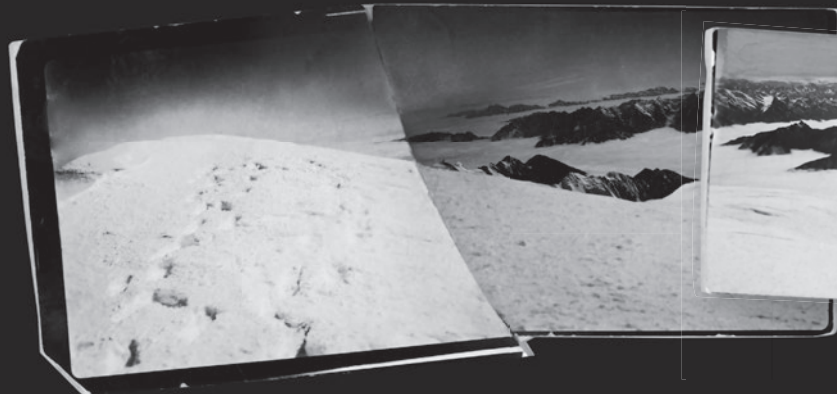


5

THE ASCENT OF MINYA KONKA:
 (1) Terry Moore and his companions at base camp; (2) Jack Young just above 17,000 feet; (3) looking toward Tibet from 18,000 feet; (4) the view from the summit; (5) a map of the mountaineers' route. Previous page, Art Emmons measuring the mountain.



3



4

V IN OCTOBER 1932, 11 MONTHS AFTER he had departed from New York, Terry Moore awoke suddenly in a tent just 2,500 feet from the summit of Minya Konka. It had been a restless night. Fierce winds buffeted the small enclosure and conjured up a storm of powdery snow inside. Huddled in his sleeping bag wearing all his clothing, Moore fretted quietly about the terrain they would encounter above. The expedition had been plagued throughout by delays and missteps; even after Moore had parted ways with Gene Lamb the necessary paperwork had taken another two months and intervention by Theodore Roosevelt Jr., then the governor-general of the Philippines. Any further delay, in the treacherous cold of late October miles above the clouds, could be deadly for the climbers.

Moore knew the dangers all too well now. The news had arrived in Shanghai in May: His friend and inspiration Allen Carpé was dead. Carpé had been studying cosmic rays 10,000 feet up Alaska's Mount McKinley when he perished. He had ventured out after a heavy snow that had hidden treacherous cracks in the glacier. "It seems very unreal," Moore wrote to Hincks as he continued to plan his own daring exploration. "I don't yet quite understand that he is gone." Carpé's body remained on Mount McKinley, entombed in a deep crevasse in the ice.

In the darkness, Moore struck a match to look at his watch. It was 11:45 p.m., just four hours before he would begin preparations for the final ascent. Only Moore and Burdsall would be making the trek to the summit. Young, struck low with altitude sickness, had descended the mountain several days earlier to handle logistics. Then, two days before the planned ascent to the summit, Emmons had sliced his palm while cutting a frozen biscuit. He could not feel two of his fingers, making it impossible to handle a rope or an ice axe. He would remain behind at the high camp.

At about 4 a.m. on October 28, Emmons arose with Moore and Burdsall and began to prepare breakfast: Chinese bread, yak butter, and oatmeal, thinned with ice and topped with Grape-Nuts and malted milk powder. They moved slowly in the thin air; breakfast took nearly an hour. The leather of their boots, which froze each night, softened by the fire. It took another hour to dress in their outerwear as they struggled with their crampons; they did not dare touch the metal without heavy mittens.

With only the glow of a tiny flashlight, Moore and Burdsall began to climb up the ice steps they had cut several days previously. "Good luck," Emmons called out as the men disappeared into the darkness. "Not a cloud could be seen in our entire sky," Moore later wrote. "A deep purple line marked the rim of our horizon one hundred and fifty miles west in Tibet. Jupiter shone brightly."

Moving cautiously, one at a time along the rocky ridges, the men averaged 300 feet upward each hour as the sun

appeared. They had been studying the mountain for months, ever since it came into view as they had traveled across the Tibetan plain. It was "a great white pyramid that dwarfed its companion peaks of the range," Moore wrote of the first time the clouds cleared to give him an unobstructed view. "There stood Minya Konka, clear and near and wonderfully huge against a background of cobalt sky. We knew it was a mountain indeed."

Through field glasses, they had mapped and remapped their route to the summit. When they had reached the base of the mountain, they had spent nearly a month scouting the best approach to its steep granite face. Even after they had started up the mountain from their base camp on October 2, they had been forced by unexpected rock outcroppings, unstable ice, and unpredictable weather to change their plans at almost every stage. Now they were traversing new ground. There would be no time to retrace their steps if they chose the wrong path.

Moore and Burdsall were still climbing as the sun began to dip in the sky. The increased altitude and hours of exertion had slowed them to a crawl. Every few feet they stopped to rest, taking desperate, shallow breaths. "Looking down the length of rope it would appear almost impossible to me that I had taken such a very long time to climb those few steps," Moore wrote, but "swinging my head to look upward the feeling would immediately vanish." His destination had remained out of sight throughout the ascent, but he knew it was close. "I suddenly beheld what was unmistakably the summit a few hundred feet above us"—and he saw a narrow path.

An hour and a half later, Moore stood atop the great snow mountain. "It was difficult to realize that we now actually stood upon the spot so high in the sky toward which...we had all labored so hard." He was so high above the world that the towering peaks that had loomed over him throughout the climb now looked like white dots against the brown plains. So high that the sun was as blisteringly hot as the wind was dangerously cold. He was higher than any American had ever climbed.

But he was not higher than the summit of Everest. Burdsall and Emmons had spent August taking some 70 measurements of the mountain with the most advanced tools available. Before he began to climb Moore knew their calculations showed that Minya Konka—now known as Gongga Shan—stood more than three-quarters of a mile shorter than Everest at 24,900 feet above sea level.

That fact did not discourage the men. "Elation over our success when we did reach Minya Konka's summit outweighed any feeling of disappointment over its altitude," Moore wrote. His treacherous four-week ascent of "that strange, far away mountain which few men but the Chinese and Tibetans, and not even many of those have seen" hadn't been about the numbers. It hadn't even been about the record books. It had been about the knowledge, about filling in the blank areas of the map. ❧

IBM Watson is redefining the legendary tech company—and every industry it touches

BY PAUL KIX

ILLUSTRATIONS BY DAN PAGE

BIG BLUE'S BIG BET

ONE DAY NOT LONG AGO, A JAPANESE woman in her 60s walked into a hospital in Tokyo, worried she might have cancer. Doctors ran tests and ultimately diagnosed her with acute myeloid leukemia, a blood cancer in which abnormal white blood cells grow quickly. They comforted her by saying that the chemotherapy they were prescribing would attack the abnormal cells. And it did.

But her recovery from post-remission therapy was slow—too slow in fact. Doctors began to wonder if she had a different type of leukemia. They ran more tests but saw no sign of one.

The hospital was affiliated with the University of Tokyo's Institute of Medical Science, which had partnered with IBM Watson, a cloud-based cognitive-computing system that attempted to complement the expertise of the doctors treating the woman. Watson had already ingested millions of oncology papers and volumes of leukemia data from research institutes around the world. Now, the doctors in Tokyo fed Watson the woman's genetic information, hoping it would find a gene mutation that had led to her cancer. Watson took the woman's data and cross-checked it against the genetic databases of the research institutions.

After 10 minutes, Watson noticed that the woman had not one but roughly 1,000 gene mutations. Many of these, however, seemed to carry hereditary marks unrelated to her cancer. It would have taken doctors at least two weeks to sift through these mutations, searching for the ones that were diagnostically significant. But Watson was able to highlight within moments which mutated genes had likely developed into cancer.

Based on Watson's analysis, the treating oncologists believed the woman had a rare secondary leukemia caused by myelodysplastic syndrome, a group of diseases in which the bone marrow makes few healthy blood cells. The doctors changed the woman's therapy plan, and her health improved considerably. She was discharged from the hospital weeks later. "We would have arrived at the same conclusion by manually going through the data," the lead doctor told the *Japan Times*, "but Watson's speed is crucial in the treatment of leukemia, which progresses rapidly and can cause complications."

This is the beauty of Watson, which began as a television stunt and has now become a major driver of innovation in fields as diverse as real estate law and songwriting. But it is in the health sector where Watson's impact is most tangible, where its benefits are literally the difference between life and death. "What I focus on," says Watson VP and CFO **Deana Korby (MBA 2003)**, "is making sure that we're smart in the things we're attacking, and to try to solve real-world problems that make an impact." Watson General Manager **David Kenny (MBA 1986)** adds: "The tech sector tends to reward short-term thinking." But Watson is different, he says: A product that was "decades" in the making, and one that will reimagine health and other fields for decades more.

Revenues at IBM have been in the red since 2012, yet analysts have pointed to Watson as the engine that can revitalize the company—as the potential through-line that will touch nothing less than everything we do in the next 30 years. So, yes, Watson is a big deal.

PERHAPS THE BEST

place to start to understand it all is in 2007, in the Semantic Analysis and Integration Department at IBM's Thomas J. Watson Research Center in Yorktown Heights, New York. There, a team of roughly 25 IBMers were researching "natural-language processing," which is the ability of computer systems to learn from a language as it is spoken, in all its idioms, colloquialisms, and technical-ese, and without having to be explicitly programmed to learn these things. The IBM computers answered questions with 35 percent accuracy, and among the institutions that researched natural-language processing, "35 percent was nothing to be ashamed of," Dave Ferrucci, the leader of the IBM team, later said.

Still, IBM's advancements were small. The company had a sense of Watson's potential to dramatically change how business is done, but had somehow fallen into the business of publishing technical papers. "I didn't want to spend the next 5 to 10 years doing these little increments and never knowing whether, with the right effort, we could solve a big challenge," Ferrucci told HBS Professor of Management Practice **Willy Shih** in a subsequent case study. So his IBM team pitched their superiors on the company building a computer that could compete on *Jeopardy!*. It was bold, even risky; *Jeopardy!* was the ur-game show of idioms and double meanings. Building software for natural-language processing meant coding a small set of question and answer types, and then having the computer choose the right answer. But in *Jeopardy!* there were roughly 2,500 types of questions, and within each type, thousands of different words or phrases that might hold the clue to the answer.

"Not knowing where to start, we started everywhere," Ferrucci said. He and his team used high-end computer power to run many different probabilistic software approaches simultaneously. They built the system so that every component produced both a proposed answer and a confidence in that answer. They built error-analysis tools, too, that helped the computer system learn from past mistakes, and all the while they fed it books, dictionaries, the Bible, encyclopedias, everything. They tested it, endlessly, reinforcing the methods that had led to correct answers and amending the mistakes, which meant tweaking the algorithms informing the computer system. Soon, IBM was flying in former *Jeopardy!* contestants to compete against Watson, its "brain" the compendium of 100 algorithms working in parallel against 200 million pages of text in 500 gigabytes of data.

When it finally played master *Jeopardy!* winner Ken

Jennings in 2011, Watson beat the all-time champion by over \$50,000. Jennings was reduced to ending the show by acknowledging “our new computer overlords.”

AT IBM, THE MOOD WAS

euphoric, but Ferrucci had always had an ulterior motive for developing Watson. “I actually was pre-med in college and aspiring to be a doctor,” he recalls in a recent interview. “But I hated that I had to memorize everything, and I thought, ‘Could I get a computer to do all this stuff so I don’t have to?’” That notion had furthered his interest in artificial intelligence, which had led to his career at IBM, and now, with Watson’s success, he saw an opportunity to merge his passions. If the natural-language processing underlying Watson could master *Jeopardy!*, what else could it do?

He wasn’t the only one to ask that question. At the time, **Sean Hogan (MBA 1993)**, a VP in IBM’s health care unit, was tasked with finding the major trends in the health and life sciences sectors that could lead to billion-dollar businesses. “We saw an opportunity in Watson,” says Hogan, who came to the company in 2001 after his IT and consultancy startup, Mainspring, was acquired by IBM. Regardless of specialty, doctors complained of rushing through their days, too overscheduled to fully comprehend patients’ lengthy and complex medical records, each often hundreds of pages long. And physicians certainly didn’t have time to read all the articles in medical journals that might help them make better diagnoses and prognoses, not with the proliferation of academic journals reportedly publishing articles at a rate of once every 26 seconds. Doctors themselves began to email and phone IBM after *Jeopardy!*, asking if Watson might pick up some of the burden of their professional lives. “We even went on a tour of hosting various dinners with prominent physicians,” Hogan says, all with a single aim: “We were looking for dramatic improvements in productivity.” There were so many issues to address in medicine, that IBM knew it had to rethink its omnibus IBM Watson Unit. “So we formed a unit called Watson Health,” Hogan says.

With *Jeopardy!*, Watson had mastered trivia, become a better *Wikipedia*. It had done this by gaining what was in essence multiple advanced degrees in the humanities, in the form of all the books—really, all the libraries—it had scanned and stored. For it to augment doctors’ skills, Hogan and others knew that Watson would need to go to med school. So IBM partnered with the Cleveland Clinic and New York’s Memorial Sloan Kettering Cancer Center, and set about teaching Watson how to be a doctor. Watson scanned and stored medical journals and textbooks, but it also began to problem-solve. At the Cleveland Clinic, for instance, which is affiliated with Case Western Reserve University, Watson worked



With *Jeopardy!*, Watson had mastered trivia, become a better *Wikipedia*. It had done this by gaining what was in essence multiple advanced degrees in the humanities, in the form of all the books—really, all the libraries—it had scanned and stored.



Subtle biases or a lack of full information lead doctors to the wrong decision, which in turn leads to bad health outcomes, including death.

alongside students who received clinical cases from their professors. Watson and the students began to attack these cases by working together. The goal was threefold, says Dr. James Young, executive dean of the Cleveland Clinic Lerner College of Medicine: Watson was to help doctors get better at diagnosing illnesses and diseases; Watson was to utilize knowledge and wisdom more efficiently; and Watson was to translate all that into outcomes that reduced morbidity.

The reality is that subtle biases or a lack of full information lead doctors to the wrong decision, which in turn leads to bad health outcomes, including death. To highlight the fallibility of the human mind, Young's Cleveland Clinic colleague Dr. Neil Mehta, assistant dean of education technology, likes to tell a story. "We had physicians review medical charts in our electronic medical records," he says. These were veteran doctors, with decades of experience, asked to review charts and come up with a problem list: All the issues that might be facing the patient. The doctors had up to one hour to pore over

these records. Watson then scanned the same charts, 27 in all, representing 27 patients, but was only given five minutes with each chart. The doctors and Watson then reviewed each other's work. In almost every case, Watson found a problem that the doctor had overlooked. "We have so much data now for every patient," Mehta says—up to 1,000 pages of records, for someone who'd been coming to the Cleveland Clinic for just two years—"and physicians have maybe 20 to 40 minutes to review the records of one patient." Watson could consume a vast quantity of files—reading 200 million pages of text in three seconds—and augment a doctor's expertise, informed by all it reads and never forgets.

Over the years, that human fallibility has led not only to misdiagnoses but to misspent dollars as well, which in turn has contributed to rising health care costs. According to a study published by the RAND Corporation, health care spending from 1999 to 2009 wiped out the economic gains of the typical American middle-class family. "If we solve our health care spending, practically all our fiscal problems go away," Victor Fuchs, the so-called dean of health economics, was quoted as saying in the study.

Sean Hogan read that RAND report. What struck him as he studied the business of health care further, as he and other IBMers talked with physicians like those at the Cleveland Clinic, is that about a third of the dollars spent were wasted, "because care was redundant, unnecessary, or potentially harmful," he says. "And we knew Watson could help."

After years of testing, refining, and more testing, Watson was about to graduate from med school.

AROUND THIS SAME

time, IBM began to throw big money behind Watson. In 2014, the company announced a \$1 billion investment in the Watson Unit, which would advance its cognitive computing technologies in not only medicine but law and finance and government services and culinary services and on and on and on. When a computer system has the processing power of Watson, and can understand language as it's spoken, as a person can, "There is no shortage of problems Watson can solve," says CFO Deana Korby. "If anything, we just have to pick the right problems." Adds GM David Kenny: "We think there's a couple of trillion dollars of inefficiencies in the marketplace." And IBM is attempting to leverage its expertise to get its share of that, he says.

Doing so, analysts say, will be the foundation for IBM deep into the 21st century. "Transformation and transition is something IBM does very well," says HBS's Willy Shih of the 105-year-old company, citing its start in butcher scales and time clocks and movement through virtually every aspect of technological development of

the 20th century. While IBM doesn't break out Watson's revenue, the unit falls within IBM's "strategic imperatives": the company's analytics, cloud-computing, mobile, security, and social businesses. Even though IBM has seen revenues decline in 18-straight quarters, the strategic imperatives unit is growing, with revenues up 12 percent from 2015. Cloud-computing in particular is rising, up 2.4 percent from the second quarter of 2016 to the third, to \$8.75 billion during the quarter. Overall, the unit now accounts for 38 percent of the company's business, according to its financial statements, with IBM spending more than \$5 billion in acquisitions in the first half of 2016 to nourish cloud businesses like Watson. CEO Ginni Rometty says hundreds of millions of users interact with Watson today, across 45 countries and 20 industries. For Kenny, the genius of Watson is not that it tries to be one service for every sector, but that it specializes, just as the experts in various fields specialize. So today there is Watson for insurance underwriters, Watson for lawyers, Watson for chefs, Watson for investment bankers, and Watson for Top 40 songwriters. "Our ability to augment expert knowledge"—to even cater to it—"is unique," Kenny says.

This specialization appears most notably in health care, a sector where one-third of dollars spent are wasted and where spending itself has outpaced the nation's GDP in all but two years since 1950. Four years after Watson went to med school, there is Watson for radiology, Watson for oncology, Watson for diabetes, and Watson for primary care. Watson serves "thousands" of clients in the medical sector, Hogan says, and that number will only increase as hospitals learn all it can do.

Once they learn, they tend to incorporate Watson quickly. For instance, at the University of North Carolina's teaching hospital, Watson moved from a novelty assisting doctors to the standard of care in six months, says Dr. Norman Sharpless, director of the UNC Lineberger Comprehensive Cancer Center. Besides reading all the medical journals, Watson could inform doctors of when certain drug trials began and when others ended; it could also sequence a genome and find important gene mutations faster and more accurately than physicians. "Today, there's just too much information for us to process, and Watson doesn't miss anything," says Sharpless. "It became almost an ethical question: 'Why shouldn't we do this?'"

At UNC, and medical centers throughout the world, the interface of Watson is fairly simple. Watson lives in IBM's cloud-computing system but appears as an icon on a physician's computer screen. If a doctor asks Watson to assist in, say, a diagnosis of a patient, the doctor types in all the symptoms, and Watson weighs those symptoms against the medical literature and perhaps even the patient's genes. Watson then lists a series of diagnoses, ranked in accordance with its confidence: The more

likely the diagnosis, the higher it appears. The diagnosing itself is left to the doctor, and if he or she wants to understand why Watson ranked one diagnosis higher than others, he can click on a hyperlink that moves to a corpus of information—the medical journals, the gene readouts and medical imagery—on which Watson based its probabilistic recommendation. "When you have an array of images and the additional information that can swing your confidence in a certain scenario," Hogan says, "it just makes for better decision-making."

And what doctors see, or rather what they will experience, will change as the technology evolves. There's an anecdote IBMers share at Watson's gleaming new headquarters on Astor Place in the East Village. One day, a boy named Kevin walked into his pediatrician's office in New York complaining of a sore bump on his neck. He was crying, rubbing his red eyes constantly, and had a fever of 102. Kevin's pediatrician thought she knew what might be making him sick, but she couldn't be sure, so she sent him to the emergency room. There, unfortunately, every test came back negative, and Tylenol didn't reduce the swelling as the doctors had hoped. As one day in the hospital became two and then three and four, doctors tried antibiotics, but to no avail. On the sixth day of his stay, Kevin was no better than when he was admitted.

Then Kevin's nurse noticed something: Not only was Kevin's lymph node still swollen, his eyes were still red. Everyone had assumed his eyes were red because he had been crying. But the nurse wondered if Kevin might have Kawasaki disease, a rare childhood illness that can harm the coronary arteries, and whose symptoms include a high fever, swollen lymph nodes, and red eyes. He was treated accordingly, his swelling decreased, and soon after Kevin was discharged.

For a couple of years now, IBMers have told this story as a way to highlight Watson's strengths, that if Watson were utilized it would have shown the doctors the probability of Kawasaki disease as the culprit much earlier. But soon that story will be out of date or rather, won't capture everything. One day, Watson will do more than just suggest likely illnesses, says David Kenny. It'll get more granular and actually prompt doctors: *Did you look for red eyes?* Watson will ask. This is the breakthrough—a computer system smart enough to ask humans questions, instead of just providing probabilistic answers. "The technology is absolutely moving in that direction," says Kenny. "Every day. We're extrapolating from what we know into what we don't know."

In other words, the machine is starting to think like the wisest among us, humbly aware of all it does not yet comprehend—but one day might. ❧

Paul Kix is a deputy editor at ESPN The Magazine. HarperCollins will publish his first book, about a French resistance fighter, later this year.



THE MIDDLE WAY

How Wally Eamer
helped broker
a historic peace
in the forests of
British Columbia

BY DAN MORRELL

PHOTOS BY KAMIL BIALOUS



On February 1, 2016, a line of First Nations drummers in traditional regalia—elaborate headdresses, each cheek bearing two red streaks—entered from the rear of a packed hall at the University of British Columbia’s Museum of Anthropology, and beat a slow, resonant path to a podium emblazoned with the words: “Great Bear Rainforest: Partnership. Balance. Certainty.”

Trailing behind the drummers was a line of speakers representing indigenous coalitions, the lumber industry, environmental groups, and the provincial government, including British Columbia Premier Christy Clark. All were on hand to celebrate a new peace: After 20 years of negotiations, the four groups had agreed on a historic deal for land use in the Great Bear Rainforest, a 25,000-square-mile stretch of BC’s north and central coastlands—the largest intact coastal temperate rainforest on the planet.

Beaming, Clark told the crowd that the agreement was “proof of the strength of what we could do if we decide to find common purpose.” The head of a regional lumber coalition touted the achievement, crediting his fellow speakers. A representative from the environmental groups said the agreement set a high bar for ecosystem preservation. And Dallas Smith, head of a regional coalition of First Nations, thanked the other speakers for their efforts to make his community a better place to live.

This scene seemed impossible when negotiations began in 1996. At the time, the four groups were in the middle of “The War in the Woods”—a series of demonstrations involving environmental and First Nations activists blocking the path of logging equipment and chaining themselves to trees and bulldozers. The protests attracted international attention and spread beyond BC, with environmentalists demonstrating outside Canadian embassies around the world.

Even after agreeing to attempt a compromise, the talks would often stall; sometimes they threatened to cease. By 2002, the original process was in disarray, and a whole new structure with new negotiators was just about to begin.

Wally Eamer (MBA 1979) watched the negotiations stumble from the sidelines. Eamer was a longtime provincial employee, but his stake in the negotiations was also personal. He had grown up in logging communities alongside First Nations and had a deep appreciation for the natural world. Everyone he knew would feel the impact of this. He was in the midst of a spiritual conversion, too, having become a Christian in 1997, and was increasingly focused on how he could best serve.

Eamer was then working as head of the provincial conservation office—“the fish and wildlife police, basically,”

he says. He was in his early 50s and in his 15th year of government work. His career was in stasis, and by 2002, he didn’t necessarily care if it went up, down, or sideways.

He had a good rapport with the provincial official who oversaw the negotiator role; he had worked for him before and shown an ability to sort out conflict. There was a mutual respect and mutual interest—and not much competition. “To be blunt, hardly anybody wanted the job, because it was widely seen as a career killer,” he says.

“I wanted a wicked problem. And this was it.”

On a temperate October day last

year, Eamer, 67, with a white beard and curly white hair, is standing on the side of the road, positioned at the nexus of four forces—environmental, provincial, commercial, and spiritual.

He’s at the base of Newcastle Ridge—on the northeast coast of Vancouver Island—where, for hundreds of years, K’ómoks people would canoe two miles from their settlements across the bay, fell the hill’s massive cedars, bring them down the hill using might or gravity, and float them back across the bay, where they would be used to build canoes, dwellings, and totem poles.

A road now bisects the hill and the coast, with a busy logging facility operating just off the water. Hulking yellow vehicles relocate felled trees around a dirt lot, navigating stacks of five-foot-thick cedar logs. The hill’s slope is mostly flush green with cedar and fir, but with an oddly shaped pockmark in the middle where a patch of cedars has been logged. Their replacements have not yet reached the height of their elder peers.

Eamer was born in Nanaimo, located across the Strait of Georgia from Vancouver, the son of a logging company bookkeeper. He watched the push and pull between these sectors for years. Tensions began flaring up in the 1980s, when the BC government approved logging on an island off the western coast of Vancouver Island that was claimed by the Nuu-chah-nulth First Nations. More than 1,200 members of the nation protested on the steps of the BC legislature, and environmental groups drove metal spikes into the trees to prevent logging. The animus was a preview for The War in the Woods, which began

More than 900 protesters were arrested in anti-logging demonstrations in British Columbia during the 1990s—a conflict that was nicknamed The War in the Woods.



in the summer of 1993. All told, more than 900 protesters were arrested in protests that summer, which included a concert by rock band Midnight Oil and an address by environmental activist Robert Kennedy Jr.

Eventually, what was a series of regional protests coalesced into a push to preserve all 12,000 square miles of forest in BC's north and central coastlands—dubbed the Great Bear Rainforest by environmentalists, and previously known as the Mid Coast Timber Supply Area by logging companies. Protests, blockades, and government proclamations continued, and environmental groups led a global boycott of paper producers that worked with local logging companies. In the late 1990s, negotiations began between the logging companies and the environmental groups; the tentative agreement struck, however, angered both the provincial government and some of the First Nations, neither of which was included in the negotiations.

While Eamer arrived at the table in 2002 as the provincial negotiator with passion for the task, it wasn't his trade. But he had natural abilities; conflict resolution was one he learned early on. His mother had died when he and his brother were young, and when Eamer turned 10, after years of having an after-school nanny, he and his brother were left to look after themselves. So when everyone would come to Eamer's house after school to play soccer, football, or baseball—which they did almost daily—they were on his watch. And kids being kids, he often had to negotiate peace on the field. "I had to keep people from fighting," he says, "because I couldn't fight everyone."

Eamer is also even-keeled, a quality that is perhaps equal parts nature and nurture. While on a volunteer mission with his family in Honduras in January 1998,

Eamer was shot by bandits. He lost seven pints of blood in the four hours it took to find a surgeon. He barely made it. Ever since, they have had a family motto: If it ain't life and death, it ain't worth panicking about. And if it is life and death, it's too important to panic.

He's good in a room. He's gregarious without being dominating. He'll ask that you tell him to shut up if he's being an idiot before delivering wisdom that sounds as if it came from the oracle itself. His laugh can fill a space. He asks about a friend's family members by name. He connects quickly.

Being personable alone will not heal decades of deep wounds, but there was one bit of training he had prior to the negotiations: a half-unit course on negotiation taught by Professor **Howard Raiffa** during Eamer's second year at HBS. Even though it had been more than 20 years since he sat in that class, a few things had stuck with him, including the best alternative to a negotiated agreement (BATNA)—which essentially entails outlining a fallback plan if things go awry and offering a reality check for people caught up in anger.

It was a particularly relevant lesson to be able to recall, given where things stood on his first day at the table. "Not on the same page" would be a vast understatement," he says. "They were not in the same universe."

“It’s difficult to understand how to work your way through to a solution. But here’s a model of where, on a large scale, it actually worked.”



Eamer's first big meeting as the

provincial negotiator was a two-day session in July 2002, at Rivers Inlet, a tiny settlement about halfway up Canada's western coast. While the First Nations played host and watched, they weren't involved in the initial negotiations. Instead, they asked the provincial government to figure out a proposal with the other stakeholders, and then negotiate the final deal with them—showing First Nations the respect of engaging in government-to-government negotiations.

As talks began, Eamer developed a game plan of sorts. He would always start discussions with the common agreements from previous meetings and then move to the contentious material—a useful way to boost hope. With 12 other people around the table, Eamer focused his messages to be clear, simple, and true. “It had to have that lyrical, poetic element to it that makes it memorable. The core of it had to be no more than 15 seconds,” he says, “and ideally it was 10.” Ultimately, one of the biggest challenges was getting everyone to give up the very idea of certainty, Eamer adds. “If they're clear on the answer from day one, you can be pretty bloody sure that one or many of the other 12 people around the table are not going to agree with it. It just means you've dug in, and you're not listening.”

It's a deep journey, he would say. You can't be sure of the outcome.

Eamer's techniques made an immediate impression on his fellow negotiators. “There are lots of people who worked for the provincial government on this, and the heroic ones were very few and far between,” says Jody Holmes, director of the Rainforest Solutions Project, the umbrella organization for the environmental groups at the table. “Their job is to stay there and not make too many waves.” But Eamer got it, she says. “He was the sane one, trying to actually find solutions.” Rick Jeffery, CEO of Coast Forest Products—a forestry coalition—remembers Eamer as a steady influence with a low-key approach. “You hardly even knew he was there, but then when he intervened, he did it in a manner where everybody would listen,” says Jeffery.

With the long days and arduous travel, tempers would flare. Sometimes, Eamer says, it seemed like everybody was creating their own little forts, and “throwing grenades at the other little forts in the room.” Holmes would later tell the *National Observer* that after a particularly heated exchange, she told First Nations representative Dallas Smith—who has a prosthetic leg—“If I was a wooden leg I'd take myself off and hit you over the head right now with it, Dallas.” (Smith burst out laughing.)

One of the most contentious issues was deciding what percentage of the lands could be logged for commercial use. The starting point had been unofficially set by the environmental groups and major forest companies for the negotiations, though the government and First Nations hadn't weighed in: Seventy percent of all the 200 types of forests in the Great Bear region would be protected from logging. As negotiations began, the parties fell along their expected lines: Forestry wanted to mitigate profit loss; the environmental groups wanted to mitigate ecosystem loss.

In a December 2003 meeting, about 18 months into the negotiations and after three particularly long days,

Eamer and his team proposed a 100/70/30 model: All of the rare and endangered forest types would be protected, 70 percent of the trees would be protected in ecosystems where sustainability was less of a factor, and 30 percent of the trees would be protected in the really common ecosystems with high commercial importance.

Facilitators for forestry and the environmentalists quickly headed off-site for a private conversation. After several hours of working out a detailed plan, they brought it to the table, complete with a proposed map. Within 15 minutes, Eamer says, there was a palpable sense around the table that they may finally be looking at the answer. Within the hour, they were all certain they had a deal.

When Eamer phoned the home office with the news, his colleagues were in disbelief. “It was incredulous joy. It really was, because there was a sense that we'd never get these things done—we'd never reach a consensus.” (Eamer stresses that the success was due to a large number of people, “not because one person was a hero



and everyone else followed the hero—that's the Big Man theory, and it's bullshit here,” he says.)

For Eamer, though, the celebration was short-lived. There was still work to be done. This hard-fought victory would be for naught if he and the province couldn't get an agreement with the First Nations that included key elements of the December deal.

Government-to-government negotiations kicked off with the First Nations in March 2004, a few months after the first agreement was reached. The province was working with two different coalitions that represented most of the 25 First Nations. This process was different from the process between the environmental groups and the logging companies: Here, Eamer had to explain the parameters and regulations of the first agreement to the First Nations coalition, what rights it gave them, and how it would impact the territory—all the while trying to maintain the essence of the pact. “The First Nations wanted to be sure that they had a much stronger say in how their own lands are managed and their place in them,” says Eamer. “And they wanted to know how it could help them get out of the cycle of dependency that they'd become trapped in.”

BC Premier Christy Clark stands next to members of the Nanwakolas Council at a ceremony announcing the final Great Bear agreement in February 2016.

Again, stakeholders at the table saw Eamer's approach as a departure. "I've never met a government person as genuine as he was," says Smith, former president of the Nanwakolas Council—one of the two First Nations groups at the table. "Not to pump his tires, but he was the turning point in the process. He made it make sense."

By the summer of 2005, a deal was struck in principle. When the official announcement finally came in February 2006, headlines declared it historic. Announcing the deal, BC Premier Gordon Campbell told a Vancouver audience that it was "an example the world can follow." The peace was announced with drums and dancing.

Two things were happening to

Eamer simultaneously around the time of the 2006 announcement. First, he was going through religious discernment—a religious self-discovery of sorts, meant to help him decide whether he would be ordained as a deacon in the Anglican Church. He had been a Christian for nearly a decade, and had begun to feel the pull more strongly. (He ultimately became a deacon in 2008.)

And second, the Nanwakolas Council, impressed by his work at the table, offered him a job helping them implement the new agreement. While the pact was a milestone, it was still a tentative framework. A final

"I wanted to be sure I didn't take their role, because the reconciliation meant they needed to be better supported and empowered First Nations leaders, not to have a white guy try and take their place."

agreement rested on successfully implementing those plans—and making sure that all the other stakeholders were holding up their ends of the bargain.

Eamer saw the two paths as parallel. "The deacon, in my tradition, is called to work with the marginalized or less powerful," he says. "Moving from one of the power actors, the provincial government, into another power actor—but one with less resources and little authority in the last century—actually fit where my religious discernment was taking me."

His move to the First Nations caught his environmental counterpart Jody Holmes by surprise. "One day he's working for the province, and the next day he's on the other side," she says. "It was a shock." For Smith, adding a provincial employee to his team helped his side build respect in the negotiations. "The government couldn't hide behind policy that didn't exist," he says. "Now the government took us a lot more seriously."

Eamer wasn't leading table negotiations for the Nanwakolas Council, because he knew Smith and the other council leaders were excellent negotiators—they didn't need him there. "I wanted them to be well-informed as they went forward," he says. "But I wanted to be sure I didn't take their role, because

the reconciliation meant they needed to be better supported and empowered First Nations leaders, not to have a white guy try and take their place."

Instead, Eamer focused on building actionable strategies for the First Nations. All the agreements with their highly specific requirements and detailed maps? Nanwakolas Council needed someone who could translate that stuff into action. Implementing the framework also worked as a check on the stakeholders, as it required access to funds promised to the First Nations as part of the initial agreement. When those funds didn't show up or forestry was accused of some infraction, it would again throw the agreement into question. High-level negotiations, still marred by disputes, were ongoing. "There was still the possibility that it could fall apart," stresses Holmes.

In the end, there were essentially two large movements in the agreement after 2006, Eamer says, both of them reducing the amount of timber supply laid out in the first framework. Then, in late 2015, "the environmental groups said, 'We have all that we need. We're signing off.'" The final deal protected 85 percent of Great Bear from logging while offering forestry companies a process for certainty of operational volumes and locations. The First Nations got increased control over the land, as well as a \$240 million fund to help them build sustainable economies.

Among the powerful lessons for others, Eamer says, hope might be the most immediate. "It's difficult to understand how to work your way through to a solution. But here's a model of where, on a large scale, it actually worked."

"It's not a quick fix," adds Holmes. There are deep repairs still necessary, she notes, both cultural and environmental. That work continues. "But it is enormously helpful to have this kind of blueprint." The protections hammered out in the Great Bear negotiations were reportedly instrumental in building a conservation agreement for the Canadian boreal forest, a 2.2-million-mile area—equal to about 60 percent of the US landmass. Smith says that he imparted lessons from the agreements with other First Nations from Nunavut in northern Quebec to native populations in Oregon and California. "This process can be repeated," he says.

The lessons of the agreement will have to be carried out by the next generation, Eamer says. He's been pulling away from Nanwakolas, eager to let the younger generation of First Nations leaders take over the management and strategy. "The selfish thing would be to continue making money and spending time with people who give you a buzz," he says. "Ultimately, honoring somebody else means that your best understanding of their best interests has to be important to you."

Instead, he has started spending more time working on his church's environmental committee. He is visiting friends. He is traveling, something he'd long been promising his wife. And he has just become chair of an addiction-counseling group, hoping to help them through a managerial change.

None of those, admittedly, feel as deep as his work with the First Nations. Not yet, at least.

"But again, it's one of those deeper journeys," he says. "You don't know what the outcome will be." ❧

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