

Creativity and the
Innovator's DNA p10

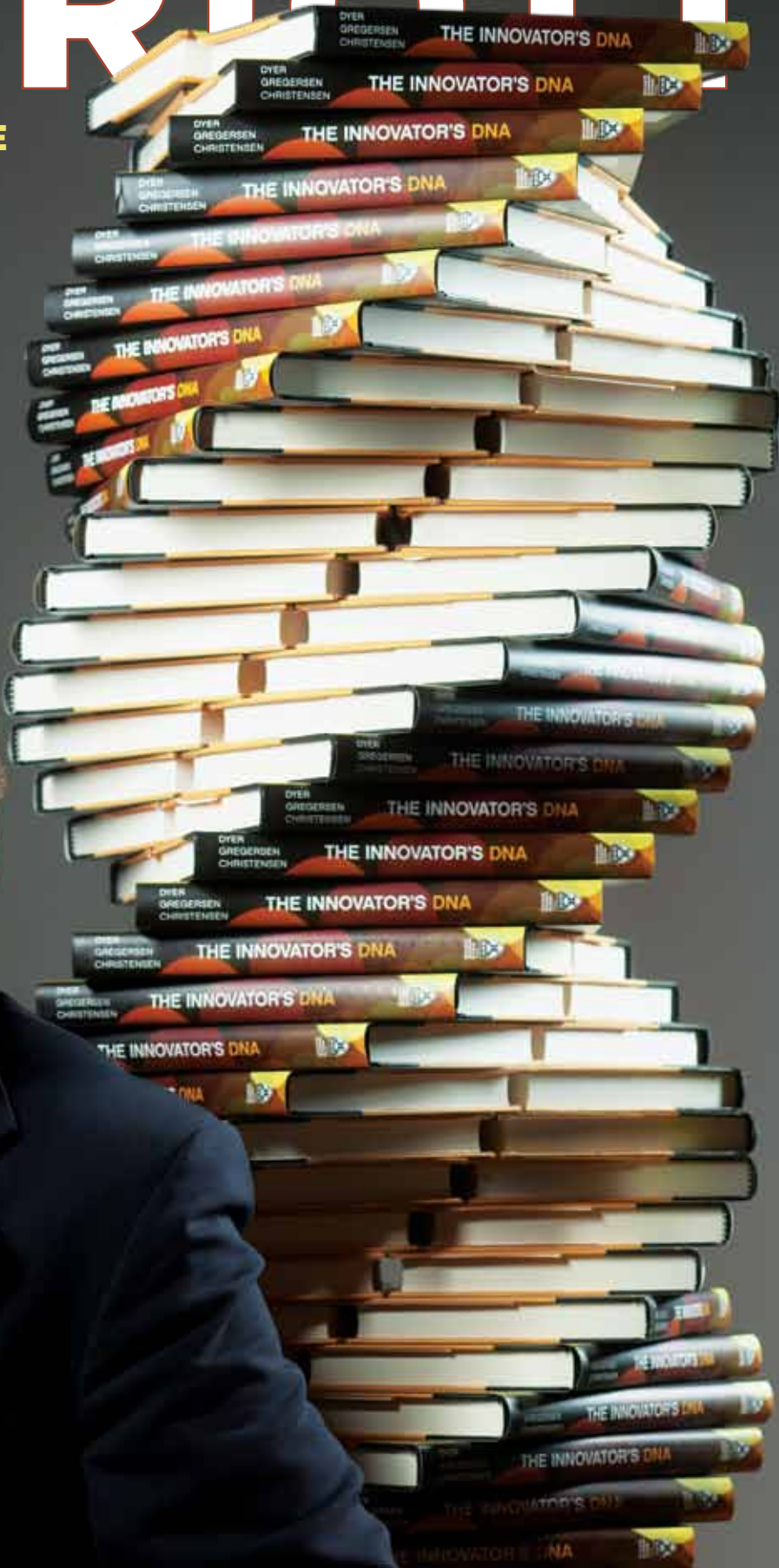
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**OVERHEARD
IN THE
TANNER**

Somehow a bee got into my straw, and I took a sip. My body didn't comprehend what was going on or something because it took me longer than it should've to realize **there was a bee in my mouth**. I just swallowed and knew there was something that was solid in there. People probably thought I was possessed or something. • Then you tell your husband: **"After you finish the dishes, I will explain accrual basis accounting to you.** By the way, did you pick up the laundry?" • It's good you have an uncle who is a senator. If I needed a passport, I'd call him. • I think that the accounting program is so great because the professors don't just teach; **they come in and perform for you**. They all have great personalities and are interesting. • Sorry I'm late, guys; I just got a haircut. Didn't you just get a haircut? Yeah, that's just what I tell people when I'm late. • You studied the whole weekend? The professor in me is happy about that, but the person in me is just disappointed. • We came up with a code to judge how good-looking they are. So if they're like really good, it's a gulp. Really, really good is a double gulp. Then we have large, medium, and small. If I say I'm going to buy a drink, it means I'm moving in. If they're married, we say it's on the rocks. **Get it? Like a rock**. Very clever, I thought. • I got two texts today. One said, "I heart you," and the other said, "I love fries." I have no idea who they are from. • I keep calling people *Sister*. I was talking about Harry Potter, and I was like, **"Yeah, Sister Weasley kills Bellatrix."** • Remember when I threw up next to you and then you almost threw up? That was a good trip. • I see you a lot in the Tanner Building. Yeah, I actually live in here. • I just found out that Devotional is in other places than the Marriott Center. I was talking to my friend, and he was listing all these places we could go. **It was like angels came down and touched my mind with understanding.** • I loved the MTC. I was in there for two months and gained fifteen pounds. • You almost married a man who married a woman whose most exciting thing in her life is flavored cream cheese. Be grateful. • My goal for this year is to not leave my apartment with my backpack unzipped. • I hate that I can't find shorts long enough for my legs, so **I have to get gangster shorts like these**. These are my thug shorts, and for some reason there are always these weird patches on longer shorts. • The experience I had here helped me understand the impact I could have in the world. **I wouldn't be in the position I am today without this university.** It helped me push beyond the expectations I set for myself.



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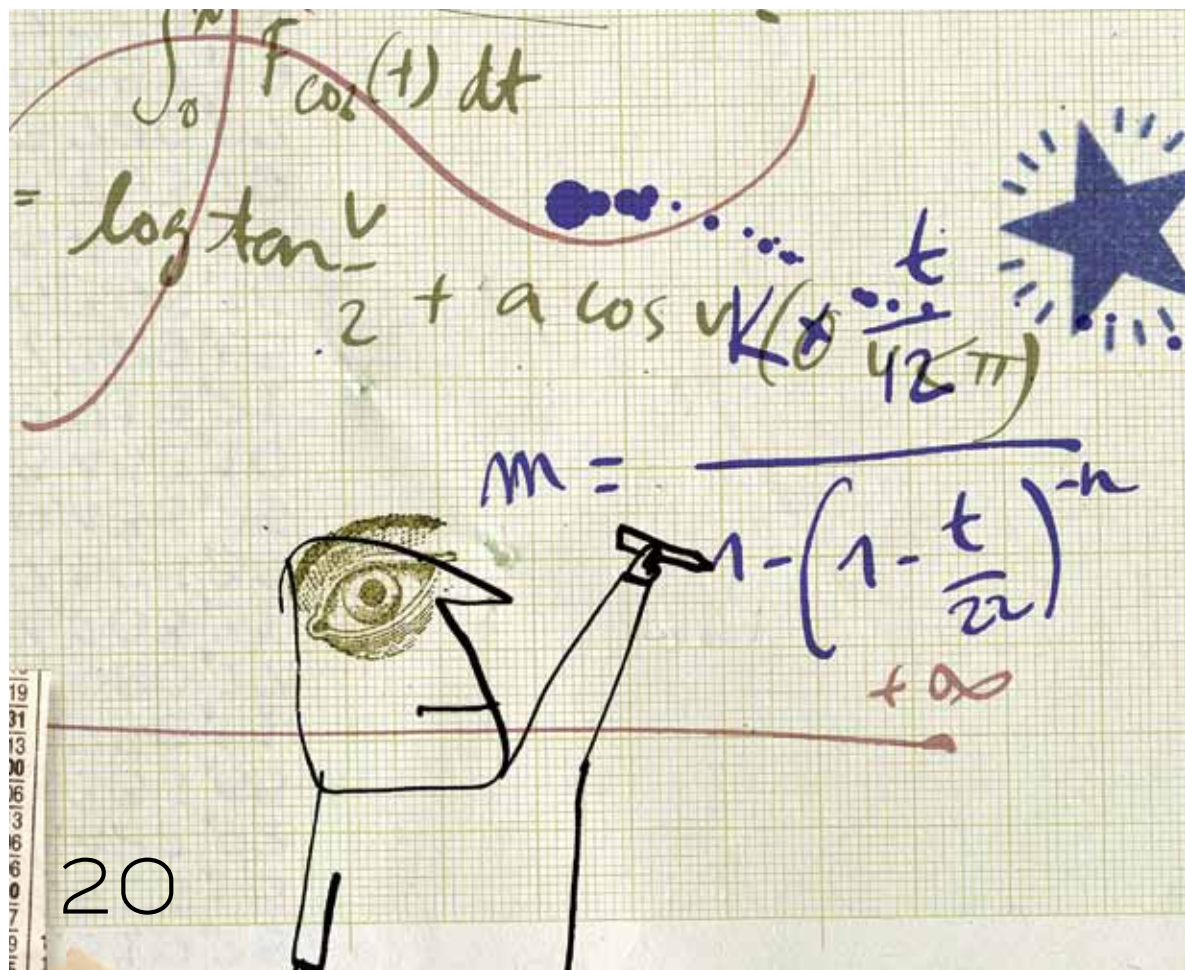
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BY MEGAN BINGHAM PHOTOGRAPHY BY BRADLEY SLADE

In Good Company

Alison Davis-Blake isn't one for convention. Her quiet demeanor, questioning mind, and drive to excel have always set her apart.

On her twelfth birthday, she asked, "Mom, when will I be like the other girls?"

"When you're fourteen."

Two years later, she asked again.

"When you're sixteen," her mother replied.

"After that I didn't ask anymore," Davis-Blake explains. "I realized I had to look for my own life."

And that's what she's done. In 2006 she became the first woman to lead the University of Minnesota's Carlson School of Management. She made history again in 2011, accepting the deanship at the University of Michigan's Ross School of Business.



Alison Davis-Blake
MOB, 1982

LEADING
ALUMNI

While her remarkable accomplishments landed her on the *Wall Street Journal's* Women to Watch list, Davis-Blake insists she hasn't gone it alone. She's drawn inspiration from great leaders. Her favorites—Margaret Thatcher, Abraham Lincoln, and Southwest Airline's founder Herb Kelleher—are an eclectic group with little in common, unless you count changing the world on their own terms. That's something the BYU graduate knows a bit about.

MODERN TIMES

For Davis-Blake and fellow female administrators, it's been lonely at the top—until now. Women currently make up 17 percent of the deans at b-schools across the country, up from 11 percent in 2002. And that change isn't just playing out in the dean's office. More women are heading to business schools than ever before. It's a far cry from Davis-Blake's own experience when she was the only woman in her undergraduate economics courses.

"My classmates were polite, but they made it clear they didn't understand why I was there," Davis-Blake remembers.

That sentiment followed her to her first teaching position at Carnegie Mellon University, where at twenty-seven, she looked young enough to be sitting in the class.

"I was perpetually mistaken for a student," Davis-Blake explains. "Even as I got older, it was difficult to see how women could receive tenure."

Margaret Thatcher—a pioneer in her field—became an inspiration for the young professor. But while Davis-Blake believes women can make distinctive contributions in the workforce, she is quick to add that it's an individual choice. "It's a very personal decision—one you constantly have to evaluate," she says.

Davis-Blake's choice has been to pursue her passion—balancing business theory with actual practice. The deanship of a contemporary business school provides the perfect mix.

"If you think of a university as a multidivisional firm, I'm acting as the divisional CEO, responsible for all aspects of the unit," Davis-Blake says. "Our business has a very specific mission—changing people through education."



he's drawn inspiration from great leaders.

*Her favorites are an eclectic group with little in common,
unless you count changing the world on their own terms.*



DIFFERENT STROKES

Davis-Blake grew up in the Twin Cities on the banks of the Mississippi. Her father was an information systems professor at the University of Minnesota—where she would later return as dean.

His work not only exposed Davis-Blake to the world of academia but also to one of her lifelong passions: travel. The family spent a year in Belgium, where it wasn't uncommon for them to take quick trips to Paris—a city Davis-Blake still loves. Her favorite museum remains the Musée d'Orsay, a converted train station with a fine collection of impressionist masterpieces.

"Those paintings represent a break from tradition that, while unrecognized in its day, turned out to be important," she says. "That's something I can relate to."

After completing her bachelor's degree at BYU in 1979, Davis-Blake accepted an accounting position at Touche Ross in New York. She loved the city but found the work less than engaging. "I wanted to immerse myself more deeply in the why," she explains. "The MOB program at BYU was a good next step."

She spent the next two years in Provo, working as a research assistant and developing skills she would later draw upon. "BYU gave me a deep and subtle understanding of organizations," she says. "It taught me how to influence people to create change."

Earning a PhD was just one of the options Davis-Blake considered after graduation, and several professors encouraged her to apply. She conceded but thought they were overly optimistic. Soon she received acceptance letters from MIT, Yale, Berkeley, UCLA, and Stanford—eventualities she hadn't prepared for.

"You don't need a master plan to be successful," Davis-Blake says. "You find your career one opportunity at a time."

After visiting each campus, she ultimately chose Stanford. There she worked with world-class mentors and even met her husband, Michael, who was a postdoctoral student. She knew he was unique when he explained why he had asked her out: "You're going to Stanford too—that's really cool!"

"He was the first man I'd met who would say something like that," Davis-Blake says.

Smiling, she adds, "I decided I needed to get to know him better."

FAMILY WAY

Married for twenty-eight years, the couple's success stems from an ability to adapt. Michael became an independent contractor so he could work from home and spend more time with the couple's two sons. When Davis-Blake accepted the deanship, he cut back his hours substantially.

"When we were first thinking about having children, I was very worried about balance," Davis-Blake confesses. "It's wise to be concerned, but if your family is a priority, you'll make it work."

Engaging the boys in her career has proven helpful. Since elementary school they've been in Davis-Blake's office, learning about her work, meeting academics, and filing papers—something she admits she's always behind on. Her youngest son, now a high school junior, even pitched in during her most recent move, shelving books in her new space.

In addition to working together, the family schedules vacations. Their first trip abroad was to London, where they created a tradition: climbing to the top of every monument they visit, beginning with St. Paul's Cathedral.

The family has since reached dizzying heights all over the world, and Davis-Blake believes it's those moments that have bound them together.

"If you're going to have children and a demanding job, there are certain things you won't do," she explains. "Most of my leisure time is family-focused. That's the choice I've made, and I've gotten immense value out of it."

COME TOGETHER

Despite her busy schedule, Davis-Blake makes time for books. One of her recent reads, *Team Rivals: The Political Genius of Abraham Lincoln*, gave her new insight into getting people to focus on the common good—a critical skill for administrators.

Shortly after stepping into a leadership role at the University of Texas at Austin, Davis-Blake learned a staff member had been posting confidential information online. While the university was not interested in

pressing charges, things quickly changed when the young woman hired an aggressive attorney. A courtroom showdown seemed imminent.

The university's lawyers instructed Davis-Blake to have no contact with the young woman, but her supervisors sought a different approach. They wanted Davis-Blake to help her.

"They could see this was going to ruin her life," Davis-Blake explains.

Davis-Blake weighed the risks and picked up the phone. When the young woman answered, she stated her objective: come clean and leave without a criminal record. The young woman agreed but said the lawyers frightened her.

"I heard myself saying, 'I will go with you and sit next to you the entire time,'" Davis-Blake recalls. "I didn't know what side I was on at that point. It was clear I was going to help the university, but I was also going to get this girl what she needed—a second chance."

The next day the young woman came in and gave a full confession. She walked out with a clear conscience and went on to attend graduate school and find employment.

"That was one of the best day's work I've ever done," Davis-Blake says.

FIRST CHAIR

Despite her innate leadership skills, Davis-Blake believes her foray into administration was happenstance.

She was working as an associate professor at the McCombs School of Business when the department chair took a medical leave. To make matters worse, no other full professors were available for the position. Though the dean approached Davis-Blake, she held her ground—no promotion, no chair. Eventually, a sociology professor with a dual appointment was contacted. He accepted the job but only on the condition that Davis-Blake eventually take over.

She spent the next three years assisting the temporary chair until she became a full professor. But after just one year of service, the dean had a new offer for her: help run the school as senior associate dean.

It was a huge step for Davis-Blake. She went from managing twenty-five people to

being responsible for nearly 200 faculty and 350 staff. The decision paid off. Headhunters noticed her work, and offers to interview for deanships came pouring in.

"There were doors opening nearly every day," Davis-Blake says. "I had to decide which one I was going to walk through. I ultimately chose the University of Minnesota."

LEAD KINDLY

For the naturally introverted Davis-Blake, it might seem that the public role of dean isn't a good fit. But instead of working the crowd, she is focused on individuals—something she picked up from Herb Kelleher.

"He proved you could build a successful business based on treating people well," she says. "It's a different industry than mine, but mine is also a people business."

According to Davis-Blake, you can lead effectively only when you care about the people you work with, the cause you're working for, and the organization you're in. It's a philosophy she puts into practice daily at Ross.

Moving to Michigan after five years in Minnesota didn't come without careful consideration. The selection process took more than nine months and provided plenty of time for Davis-Blake to debate the choice.

"I wondered if I'd be able to make a contribution," she says.

Seven months into her new role, Davis-Blake is already positioning the school at the forefront of business education with action-based learning initiatives.

"We're asking, how do we learn from experience, how do we make it last longer, and how do we embed it into the curriculum?" Davis-Blake says. "Michigan is really poised to make its mark there."

While charting a course for the school, she is loath to think or talk about what's next.

"The immediate future is that I'm going to be here at Ross," she says. "I don't know after that. A door will open, and I'll know that door when it comes." **M**

ABOUT THE AUTHOR

Based in New York City, Megan Bingham is a writer and editor at Family Circle magazine. She graduated from BYU in 2010 with a degree in communications.

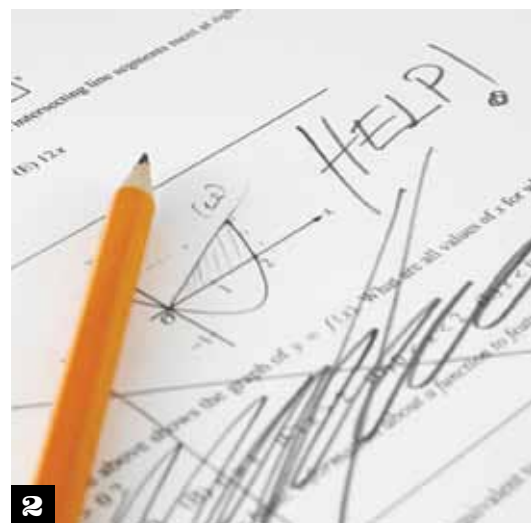
around the COOLER

BY TODD HOLLINGSHEAD

Q1: WHAT'S THE DIFFERENCE BETWEEN A BROKER AND A DEALER?

A: THE BROKER IS THE ONE WITH NO MONEY.

It could be that this answer was the result of the student having been acquainted with a struggling broker. Or it could have been the result of careful word-based deduction. Of course, it could also be the result of one of professor Grant McQueen's smart-aleck finance students who had no idea.



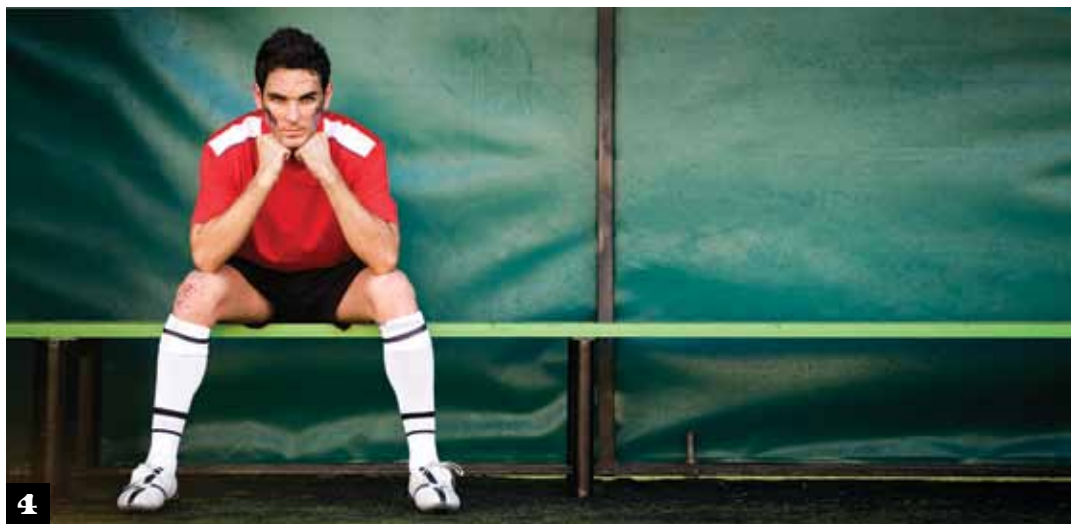
Filling In the Blank

All students, at some point, face exam questions that baffle, mystify, or simply confound them. As bright and good-looking as Marriott School students are, we've discovered they are no exception. This is where creativity takes flight. Some students make an educated guess and a few strive to overwhelm with a tsunami of words or numbers. But it's the clever, unexpected response that brings a smile to the weary grader and occasionally wins the student a point or two. Here are some of the Marriott School's "best" answers.

Q2: WHAT EVIDENCE IS THERE THAT THE CHANGE EFFORT WAS SUCCESSFUL?

A: THERE WAS A CHANGE.

This was an attempt to answer an OBHR quiz question from professor Kristin DeTienne. Although she didn't think it was very creative, the student's response did give us a laugh. And, let's be honest, it's a pretty logical answer—especially during a quiz.



	USA	USD	8888
	U. KINGDOM	GBP	8888
	CANADA	CAD	8888
	CHINA	CNY	8888
	EURO	EUR	8888
	JAPAN	JPY	8888
	SINGAPORE	SGD	8888
	HONG KONG	HKD	8888
	NEW ZEALAND	NZD	8888
	MALAYSIA	MYR	8888
	THAILAND	THB	8328
	INDONESIA	IDR	8888

Q3: USING THE FINANCIAL INFORMATION ABOVE, IDENTIFY WHICH BRANCH IS STRUGGLING AND EXPLAIN WHY.

A: WHICH BRANCH IS STRUGGLING? BARRANQUILLA IS STRUGGLING. ABC SAVE US!

On the toughest question of a final, one student appealed to accounting professor Monte Swain's poetic side.

Q4: WHAT IS THE DEFINITION OF "DEBENTURE"?

A: A PERSON WHO VIOLENTLY REMOVES ANOTHER PERSON FROM A BENCH.

On this accounting question, professor Cassy Budd was hoping for "an unsecured bond or debt instrument not secured by a physical asset." What she got instead, albeit clever, almost knocked her off *her* seat.

Q5: NAME A LINK-BUILDING STRATEGY.

A: SAVE ZELDA.

Anyone who is a fan of the original Nintendo 8-bit system can appreciate this answer from an internet marketing final professor Jeff Larson gave. Maybe the student will spend future reading days at the library instead of clicking Continue, Save, or Quit.

Q6: WHAT IS THE AMOUNT OF COSTS OF GOODS SOLD?

A: PURCHASES + ACCUMULATED DEPRECIATION.

There is a risk that only the hard-core accounting audience will find this nomination from professor Kay Stice amusing. But anyone who's paying off his or her Christmas bills should be able to relate.

Q7: PLEASE PROVIDE FEEDBACK ON THE COURSE.

A: I NEVER UNDERSTOOD PURCHASING POWER PARODY.

In his international finance course, professor Brent Wilson teaches about purchasing power *parity*, which theorizes that foreign exchange rates change based on differences in inflation rates. Points for straight-up honesty?



◆ — Jeff Dyer



the INNO- VATOR'S DNA

Five skills
to develop
your creativity

ADAPTED FROM A NEW BOOK BY JEFF DYER, HAL B. GREGERSEN, AND CLAYTON M. CHRISTENSEN

Photography by Bradley Slade

Some babies are born with the double helixes that turn into blue eyes and heads of light, curly hair. Most people think that innovators are born with special genes, like those that determine physical features, that enable them to be innovators—an endowment you either have or you don't.

But our extensive analysis of research on the subject concludes that creativity is not

simply a genetic trait, rather something that can be developed. In fact, the most comprehensive study confirming this was done by a group of researchers, Marvin Reznikoff, George Domino, Carolyn Bridges, and Merton Honeyman, who studied creative abilities in 117 pairs of identical and fraternal twins. Testing twins, ages fifteen to twenty-two, they found that only about 30 percent

of the performance of identical twins on ten creativity tests could be attributed to genetics.¹ In contrast, roughly 80 percent to 85 percent of the twins' performance on general intelligence (IQ) tests could be attributed to genetics.²

General intelligence (at least the way scientists measure it) is basically a genetic endowment, but creativity is not. Nurture

trumps nature as far as creativity goes. Six other creativity studies of identical twins confirm the Reznikoff et al. result: roughly 25 percent to 40 percent of what we do innovatively stems from genetics.³ That means that about two-thirds of our innovation skills still come through learning—from first understanding the skill, then practicing it, and ultimately gaining confidence in our capacity to create.

This is one reason that individuals who grow up in societies that promote community versus individualism and hierarchy over merit—such as Japan, China, Korea, and many Arab nations—are less likely to creatively challenge the status quo and turn out innovations (or win Nobel Prizes). To be sure, many innovators in our study seem genetically gifted. But more important, they often described how they acquired innovation skills from role models who made it “safe” and exciting to discover new ways of doing things.

If innovators can be made and not just born, how then do they come up with great new ideas? Our research on roughly five hundred innovators compared to about five thousand executives led us to identify five discovery skills that distinguish innovators from typical executives. These skills are associating, questioning, observing, networking, and experimenting.

ASSOCIATING

Innovators count on a cognitive skill that we call associational thinking or simply associating. Associating happens as the brain

tries to synthesize and make sense of novel inputs. It helps innovators discover new directions by making connections across seemingly unrelated questions, problems, or ideas. Innovative breakthroughs often happen at the intersection of diverse disciplines and fields.

Author Frans Johansson described this phenomenon as “the Medici effect,” referring to the creative explosion in Florence when the Medici family brought together creators from a wide range of disciplines—sculptors, scientist, poets, philosophers, painters, and architects. As these individuals connected, they created new ideas at the intersection of their respective fields, thereby spawning the Renaissance, one of the most innovative eras in history. Put simply, innovative thinkers connect fields, problems, or ideas that others find unrelated.

The next four discovery skills trigger associational thinking by helping innova-

are valued at least as highly as good answers. Collectively, their questions provoke new insights, connections, possibilities, and directions.

OBSERVING

Innovators are also intense observers. They carefully watch the world around them—including customers, products, services, technologies, and companies—and their observations help them gain insights into and ideas for new ways of doing things.

Jobs’ observation trip to Xerox PARC provided the germ of insight that was the catalyst for both the Macintosh’s innovative operating system and mouse and Apple’s current OSX operating system.

NETWORKING

Innovators spend a lot of time and energy finding and testing ideas through a diverse network of individuals whose backgrounds

Innovators are also intense observers. They carefully watch the world around them.

tors increase their stock of building-block ideas from which innovative ideas spring. Specifically, innovators engage the following behavioral skills more frequently.

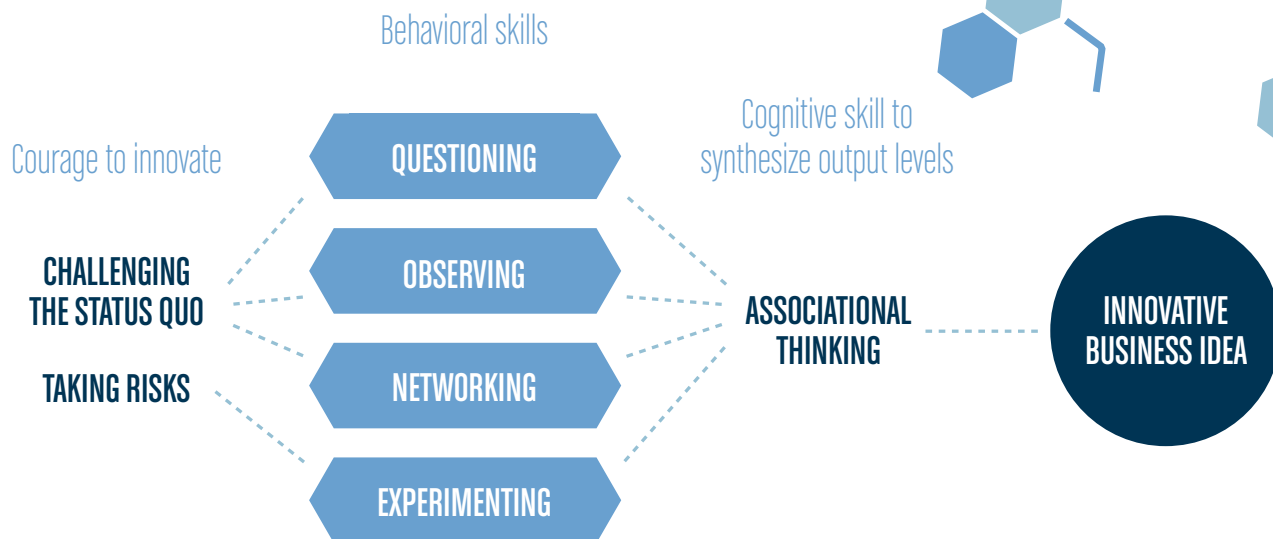
QUESTIONING

Innovators are consummate questioners who show a passion for inquiry. Their queries frequently challenge the status quo, just as Apple Inc. co-founder Steve Jobs did when he asked, “Why does a computer need a fan?” They love to ask, “If we tried this, what would happen?” Innovators, like Jobs, ask questions to understand how things really are today, why they are that way, and how they might be changed or disrupted.

We found that innovators consistently demonstrate a high question-and-answer ratio, where questions not only outnumber answers in a typical conversation but also

and perspectives vary wildly. Rather than simply social networking or networking for resources, they actively search for new ideas by talking to people who may offer radically different views of things.

For example, Jobs talked with an Apple Fellow named Alan Kay, who told him to “go visit these crazy guys up in San Rafael, California.” The crazy guys were Ed Catmull and Alvy Ray, who headed up the computer graphics division of Industrial Light & Magic. The group created special effects for George Lucas’ movies. Fascinated by their operation, Jobs bought the division for \$10 million, named it Pixar, and eventually took it public for \$1 billion. Had he never chatted with Kay, he would never have wound up purchasing Pixar, and the world might never have thrilled to wonderful animated films like *Toy Story*, *WALL-E*, and *Up*.



EXPERIMENTING

Innovators are constantly trying new experiences and piloting new ideas. Experimenters unceasingly explore the world intellectually and experientially, holding convictions at bay and testing hypotheses along the way. They visit new places, try new things, seek new information, and experiment to learn new things.

Jobs, for example, tried new experiences all his life—from meditation and living in an ashram in India to dropping in on a calligraphy class at Reed College. These varied experiences would later trigger ideas for innovations at Apple Computer. Collectively, these discovery skills constitute the innovator's DNA, or the code for generating innovative business ideas.

While you have your great-grandpa to thank for your freckles or the crook in your nose, the ability to be creative is mostly up to you. By strengthening the cognitive skill of associating, combined with the behavioral skills of questioning, observing, networking, and experimenting, your innovative intelligence is bound to grow, no matter what's written on your DNA. **M**

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FOOTNOTES

1. Marvin Reznikoff, George Domino, Carolyn Bridges, and Merton Honeyman, "Creative Abilities in Identical and Fraternal Twins," *Behavioral Genetics* 3, no. 4 (1973): 365–377. For example, the researchers gave the Remote Associations Test (RAT), in which they presented twins with three words and asked them to find a fourth word linking the three; they also gave them the Alternative Uses Test, in which they asked the subjects to brainstorm as many alternative uses for a common object—like a brick—and code how many total and divergent responses the subjects provided.
2. See K. McCartney and M. Harris, "Growing Up and Growing Apart: A Developmental Meta-Analysis of Twin Studies," *Psychological Bulletin* 107, no. 2 (1990): 226–237.
3. Other studies that have found nurture trumps nature as far as creativity goes include: F. Barron, *Artists in the Making* (New York: Seminar Press, 1972); S. G. Vandenberg, ed., *Progress in Human Behavior Genetics* (Baltimore: Johns Hopkins Press, 1968); R. C. Nicholls, "Twin Studies of Ability, Personality, and Interest," *Homo* 29 (1978), 158–173; "Creativity, Heritability, and Familiarity: Which Word Does Not Belong?" *Psychological Inquiry* 4 (1993): 235–237; N. G. Waller, T. J. Bouchard Jr., D. T. Lykken, A. Tellegen, and D. Blacker, "Why Creativity Does Not Run in Families: A Study of Twins Reared Apart," unpublished manuscript, 1992. For a summary of research in this area, see R. K. Sawyer, *Explaining Creativity: The Science of Human Innovation*, 2nd ed. (New York: Oxford University Press, forthcoming).

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Hal B. Gregersen is a professor of leadership at INSEAD and a senior fellow at Innosight, a management consultancy. He is the co-author of seven books, including *It Starts with One: Changing Individuals Changes Organizations* and *Global Explorers: The Next Generation of Leaders*. He and his wife live in France and Abu Dhabi, where he pursues his lifelong avocation, photography, and she pursues her lifelong love, painting, as part of a global community of social entrepreneurs dedicated to creating positive change through the arts. Gregersen was formerly the Donald Staheli Professor of Global Leadership and Strategy at the Marriott School.

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Emerging MARKETS



BY **Eric Varvel**

ILLUSTRATIONS BY
Aad Goudappel

IN MY CAREER AND MY LIFE I HAVE FOUND the key determinants to success include one's ability to take on a challenge and adapt to change. Change comes in many forms: your responsibilities, your callings, and your addresses.

I'd like to talk about the evolving global economic picture and what that means to the United States and to your futures. Second, I want to point out how internet connectivity and social networks are helping to further transform the private and public sectors.

Changing Markets

In developed economies, real GDP during the past eight years was a meager 14 percent; in developing nations, GDP growth was nearly five times as high—69 percent. The result has been a seismic shift in the global economy. In 2010 developing economies purchased or produced a majority of the world's steel, mobile phones, and concrete. In the second quarter of 2011, there were more personal computers purchased in China than in the United States. The emerging markets, which accounted for only 31 percent of the world's global GDP as recently as 1990, now account for half.

We can learn much from an age when today's most advanced economies were themselves emerging. By studying how these countries made the journey from developing to developed, we can gain valuable insights into the projected course of modern emerging markets.

The world was a very different place in the year 1000. Western Europe was an impoverished backwoods. The majority of the world's wealth lay in the East. Asia, not including Japan, accounted for more than two-thirds of the world's GDP. China and India were the world's two largest economies.



Around the year 960, China entered a period of rapid development. By the year 1280, its population had nearly doubled and its economy was the envy of the world.

Soon after, fortunes began to change. The world's more developed economies entered a long period of stagnation while once-impoverished economies began their ascents. By 1500 western Europe's per-capita income had nearly doubled. As Europe's economic growth inched upward, China's stalled. During the 19th century and for most of the 20th century, the wealth gap between Western civilization and the rest of the world grew wider. Countries in the West that had once been emerging markets became dominant, while China and India languished in comparison.

When we look back, we can see many parallels to the economic transformations occurring in our own era. It is true that the past is not a perfect guide to the present, but one core lesson is that the emerging markets of one era can be the developed markets of another era. The opposite is also true; markets are cyclical, not static.

Since 1980 China has amazed the world with growth rates averaging 10 percent. Last year the country overtook Japan to become the world's second-largest economy. China's GDP is projected to surpass the United States in purchasing power parity in 2016. When that time comes, China will regain the title it lost years ago as the world's largest economy.

China is not the only country that has experienced an economic renaissance; Brazil, Russia, India, and China

generated 45 percent of global growth from 2007 to 2009. The countries of sub-Saharan Africa have recorded an average annual growth rate of 5.8 percent since 2004. Around the world emerging markets have grown maybe four times as fast as developed markets in the past decade.

What's driving this rapid growth? In large part it's the same forces that propelled Western economies during their growth periods: savings, investments, education, and liberalizing economic policies. In 2000 emerging markets graduated 30 percent more university students than developed countries. Now it's twice as many. Between 1980 and 2008 the number of Indian students enrolled

in American institutions of higher education increased tenfold, while the number of Chinese students increased nearly thirtyfold.

I've also seen the impact in workforces. When I went to work in Asia, the senior management in major companies were generally Caucasians. Now they're all local Asians. They're being educated, assuming leadership roles, and doing very well.

Another factor contributing to growth in emerging markets is smart public policy, such as strengthening the rule of law and intellectual property rights, deregulating industries, and modernizing financial services. Emerging markets have also become more fiscally disciplined. This stands in stark contrast to what we saw at the height of the Asian financial crisis. The debt-to-GDP ratio in emerging Asia was 60 percent in 1998, with the United States at about 65 percent. Since then the debt-to-GDP ratio in Asia has declined to 41 percent; in the United States it has risen to 85 percent.

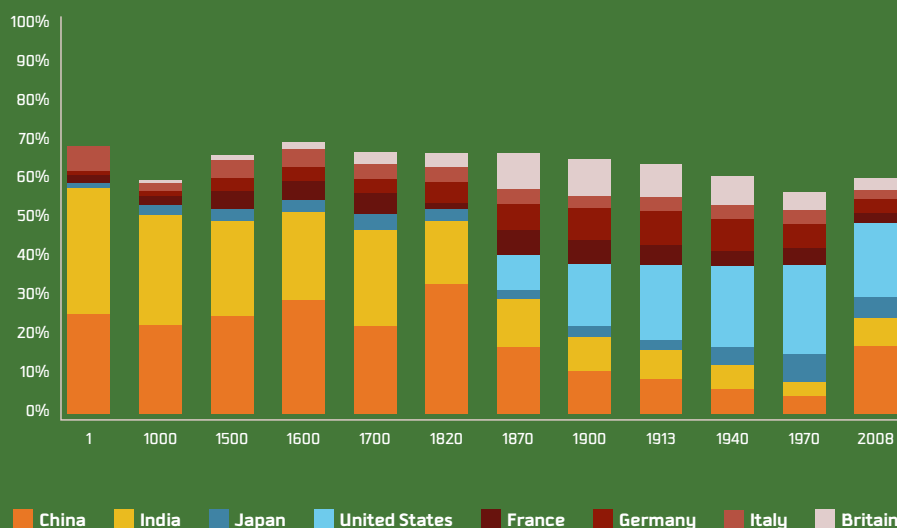
No country better illustrates this economic progress since 1998 than Indonesia. Having lived there, my family and I experienced the rule of a dictator, and we were also there when circumstances changed. During the latter half of the 1990s, Indonesia struggled economically and politically, but in recent years it has opened its economy, lowered debt levels, begun to combat corruption, and emerged from the financial crisis.

Some facts about Indonesia demonstrate how emerging countries are becoming global powers. Indonesia is the most populous country behind China, India, and the United States. It has the second-most Facebook accounts, behind the United States, and has the third largest number of Twitter users in the world. In 2005 there were 1.6 million Indonesians in the middle class. In 2010 that number had risen to 15 million.

One core lesson is that the emerging markets of one era can be the developed markets of another era.

A WORLD HISTORY OF GDP

Percentage of global total, 1990 \$ at Purchasing Power Parity



As we reflect on Indonesia's achievements, there's another country with many similarities that also has potential to follow in its footsteps: Egypt. Both were governed by a dictator; during that time both countries experienced low levels of economic growth. Egypt, like Indonesia, has had a very rapid transition to democracy. They both have large youth populations that will mature in the coming years. The key question now is whether Egypt, a country of 82 million, can replicate the success of Indonesia, a country of more than 200 million, but it's too early to tell. Egypt has enormous potential to emerge as a democracy and, by doing so, to serve as an example to other countries throughout North Africa and the Middle East. If that were to happen, it could help unleash a new era of growth.

With more than half the population of all the countries that have participated in the Arab Spring, Egypt could exert huge influence in the region. And the country also underscores my point about superpowers of the past: Egypt of ancient times not only gave us pyramids, but it also gave us innovations in mathematics, medicine, and agriculture. After a long period of decline, Egypt has the potential to wield significance on a world stage once again.

Changing Technology

Thinking of the changes engendered by the Arab Spring, it would be hard to overstate the importance of the internet and especially social media on these movements. But there have been other foundational changes as well.

Consider the increase during the past decade in the number of people with internet access; it has increased from 361 million in 2000 to 2.1 billion in 2011, and by 2020 it is expected that 5 billion people will be online. Expanded internet connectivity coupled with rising living standards are also giving way to an explosion in the quantity of information being generated. The information created from the dawn of civilization until 2003 is equivalent to the amount of information that was created every forty-eight hours in 2010. This amount of information is projected to be created every hour by 2020.

We continue to see mobile phone use in new and different lights. In 2009 the data from all texts, emails, streaming video, music, and other services on American mobile devices surpassed the data used for voice on cell phones. Expect this trend to

**Customers identify
what they want
by seeing it online,
not by looking
at merchandise in
brick-and-
mortar stores.**

spread throughout the world.

Expanded connectivity coupled with greater consumer usage is creating opportunities for a range of companies. Google, Facebook, and Amazon are taking specific information received from customers of other services, synthesizing it, and employing it back at their customers. Google uses algorithms, derived from search behavior, that analyze your

history and target advertisements back at you. Amazon makes recommendations of particular books and other merchandise based on your buying history and that of others like you. Facebook and LinkedIn make suggestions of friends, contacts, groups, jobs, and activities.

By mining information, companies target suggestions to individual consumers, hoping to create more favorable experiences. As the digital world has expanded, there's also been a steady growth in online spending. In 2000 online advertising reached \$8.3 billion. Online advertising spending reached \$72.2 billion in 2011—a historic year, since more money was spent on internet advertising than on print advertising.

These developments have both positive as well as negative implications. Let me start with the positive. For many businesses the explosion of information and connectivity translates to lower operating costs. As there are efficiencies, higher productivity, and more easily targeted advertising, the cost of acquiring customers is reduced. For example, as customers attain information on their own, there's also less need for large inventories or sales teams. Customers identify what they want by seeing it and reading about it online, not by looking at merchandise in



brick-and-mortar stores. The reduced costs across a range of sectors will be good for earnings prospects and will make these companies more profitable and more attractive.

Now let me turn to the downside of social connectivity and the internet. One of the by-products of technology is likely to be higher unemployment. As consumers obtain more information on their own and as businesses can target their customers more effectively, there will be less need for customer-facing employees such as retail sales associates and cashiers.

Let me tell you about a Chinese company called 360buy. It's an online merchandise retailer with very few employees and no retail stores. It sells goods across a multitude of categories at very low prices. Customers can enter any store, take a picture of a product's barcode with their phones, and text it to 360buy, which sends back a picture of the same product with a much lower price. Customers can purchase it on their phones and have it mailed to their houses. This is pulling the customer away from the retail store. Entities like 360buy can be great not only for consumers who get lower prices but also for companies that employ fewer people. But as more companies adopt this model, the benefits of convenience and low prices may reveal new challenges that come with eliminated jobs.

As technology produces more efficient businesses with reduced costs and stronger balance sheets, there's likely to be a bigger burden on the governments saddled with the increased welfare spending associated with higher unemployment. Adding to the burden will be the fact that governments often cannot achieve comparable efficiencies; they typically find it difficult to reduce headcounts since public sector workers enjoy union protections.

Those with high incomes will benefit from technology-driven changes in the form of lower-priced goods and, likely, as investors in some of these fast-growing companies. But those with lower incomes will be vulnerable to having their jobs eliminated by emerging technologies. It will be a challenge for those who are displaced by technology to find new opportunities. We may see a resurgence in U.S. manufacturing, but it would probably provide lower-wage jobs and require workers to gain new skills.

Conclusion

A Chinese proverb says, "When the winds of change blow, some build walls, others build windmills." There is opportunity in volatility. When the established order is being remade, the barriers to success are much lower. Examples across the decades prove this. The electric razor, the car radio, and nylon were launched during the Great Depression. The technology that brought Xerox copies was actually developed by a worker who was laid off in the early 1930s and grew frustrated making handwritten copies as a part-time job. Many leading American companies got their

**Education is
fundamental to
seizing opportunities
associated with
new technologies
and changing global
GDP trends.**

starts during the recession of the 1970s: Federal Express, Microsoft, and Apple. When the old ways of doing things aren't delivering robust economic growth, there is a greater willingness to experiment.

Education is fundamental to seizing opportunities associated with new technologies and changing global GDP trends. There will continue to be jobs available to those with college degrees, but the number of jobs that don't require college degrees will continue to shrink and these jobs will pay less. This underscores my point about adapting to change. This country, like so many others, must do more to promote high achievement in education, to make sure students graduate with the skills they need to access the opportunities ahead in the 21st century.

Your ability to be open to change will drive your careers. Be prepared to move—to new countries even—to pursue experience and capture opportunities for professional and financial growth. Be willing to consider positions with non-United States companies, which are going to be growing very quickly. Achieving success may require a different model from the one your father and mother grew up with. But if you can adapt and be flexible, you'll be very well positioned. There are incredible opportunities ahead. **M**

About the Speaker

Eric Varvel is CEO of Credit Suisse Investment Bank and a member of the Executive Board of Credit Suisse Group and Credit Suisse, based in New York. He is also a member of the Marriott School's National Advisory Council. He and his wife, Shauna, have five children. This article is adapted from the Honored Alum Lecture he gave in October 2011.



READY, SET, AUDIT!



SIGNS MARK THE ENTRANCE: Production Area—Authorized Personnel Only. Inside, observers stand behind a line of caution tape, taking notes intently. In front of them a rumbling machine shuffles orange, green, and yellow balls along conveyor belts, through tubes, and down ramps. Mo, the machine operator, keeps things moving and picks out an orange ball, tossing it to the tour guide.

“Are there logs kept of the orange balls when you throw them away?” asks an onlooker.

“I don’t keep logs of things; I’m just the PR guy,” chuckles the guide as he pockets the rejected orange sphere.

The accounting students attempt to conceal their laughter as they record the statement made by their reflector-vest-and-

hard-hat-clad professor, Bill Heninger. Their class is auditing a fictitious manufacturing company, set up in the Tanner Building by Professors Heninger and Steve Glover.

The hands-on lesson combines Heninger’s advanced information systems class and Glover’s advanced financial statement auditing class to clarify abstract concepts.

“We’re trying to understand the processes and controls of a company to see where there are weaknesses,” says Tanner Lamb, a Macc student from Orem. “Sometimes weaknesses allow for fraud or lead to inaccuracies in accounting, and we want to prevent that.”

While the company exists for only a few hours, Heninger says Lamb and the other students go through a rather lifelike auditing

Problems that have been planted in the processes and controls—such as a broken counting device, imprecise packaging methods, and opportunities for employee fraud—keep the students on their toes.

“We feel like there may be some shady practices,” said Nick Guest, a Macc student from Logan, Utah, after his group interviewed professor Doug Prawitt, who played a machine operator named C. J. “We don’t know what they do with those orange balls removed from the production line. And we were concerned when we found out that C. J. and the CEO are brothers.”

Glover says he began teaching the interactive simulation five years ago when PricewaterhouseCoopers donated the ball-sorting machine, a tool the company had used to train its employees. Over the years he and other accounting professors have played various roles, donning wigs, work boots, hard hats, and even fake teeth to complete their performances.

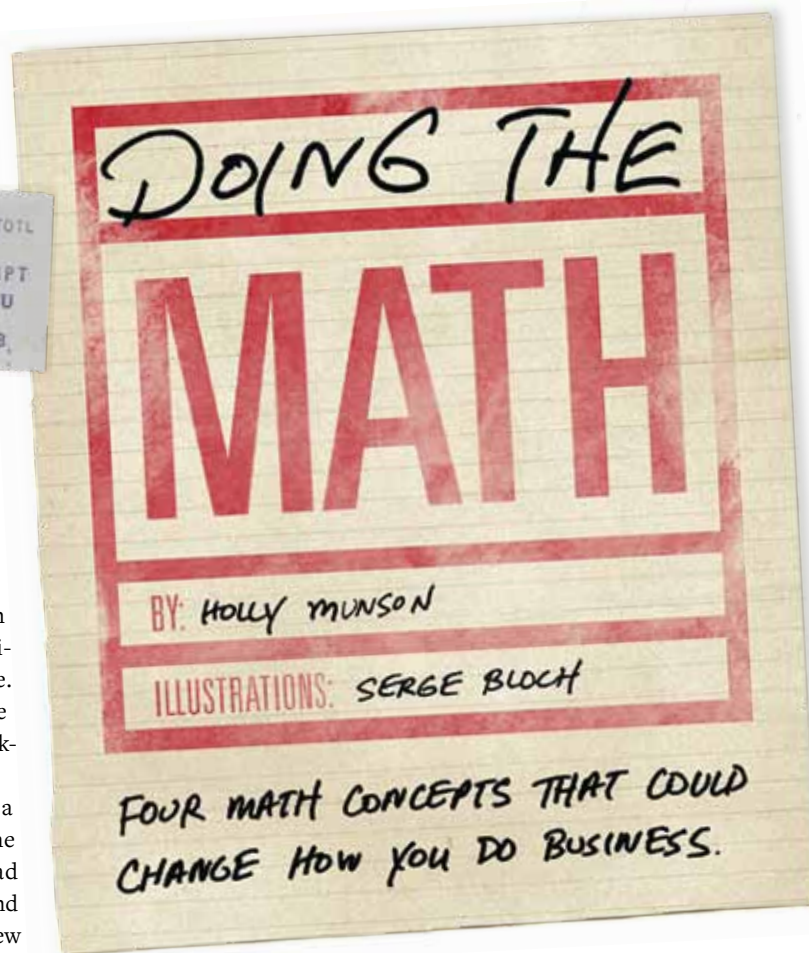
While Glover and his colleagues are not winning any Tony Awards for their role-playing, he says students and professors alike enjoy the opportunity to bring auditing to life.

“Obviously it’s a controlled environment, but the hands-on experience is very valuable,” Lamb says. “The interview process, looking at a machine, and walking through the company helped me see how that whole procedure actually works. You learn things in the classroom, but applying them like this really helps them become solid.”

“We’re trying to understand the processes and controls of a company to see where there are weaknesses.”

simulation. The students receive financial statements and background information from the fictitious company and then participate in a factory walk-through, where they observe the manufacturing floor and interview employees played by accounting professors. To follow up, they create a detailed outline of each of the company’s processes and corresponding controls and give recommendations for preventing inaccurate accounting.

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Jeremy Charlesworth could see the skepticism on his client's face. She didn't say it, but he knew what she was thinking: *You're wrong.*

Charlesworth, a research analyst for The Nielsen Company, had been asked to recommend a name for the client's new product. At first glance, one name stood out. Then Charlesworth started digging into the data and doing the math—and, according to his analysis, the initially appealing name wasn't so appealing: it carried the risk of cannibalizing the company's other brands. But his client was unconvinced.

"I felt so dejected," Charlesworth says. "This was my first big project for this client, and I was sure my analysis showed what was best for the business."

Fortunately, not long after their discussion, the client met with her team and reviewed Charlesworth's report—and his math.

"When they saw the numbers, they were convinced that they should go with my recommendation," Charlesworth says. "In the

end, they appreciated my analysis."

Much like Charlesworth, professionals at every level and in every industry are using math to help make better decisions. Most people agree that being able to do the math is an important, even essential, skill. Why then do

so many—including many in the business world—recoil at the thought of using numbers to solve problems?

"People almost view it as a badge of honor that they can't do math," observes Laura Laing, a former high school math teacher and author of *Math for Grownups*. "It becomes a label they give themselves. But it's funny: we don't walk around saying, 'I'm such a bad reader.' If someone does, it's likely that other people will want to help that person improve. The same thing needs to be true for math."

Jeffrey Humpherys, associate professor of mathematics at BYU, points out that culture—particularly in America, where students' math test scores lag far behind other industrialized nations—is a major factor in math's unpopularity.

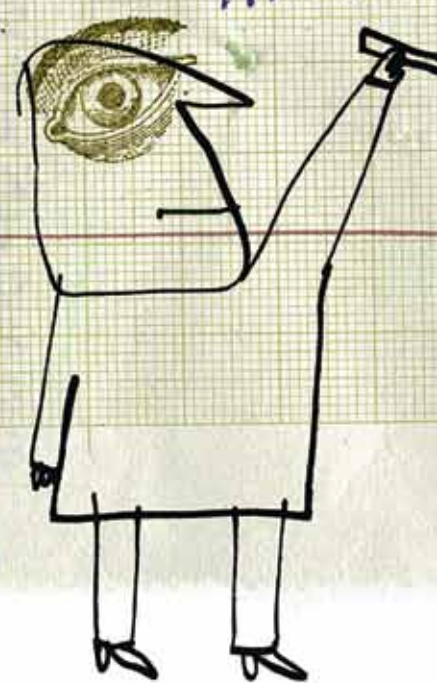


$$z = z_0 + z_{11} + z_{40}$$

$$\frac{\int_0^N F_{\sin}(t) dt}{\int_0^N F_{\cos}(t) dt}$$

$$Z = \log \tan \frac{v}{2 + a \cos v \left(1 + \frac{t}{42\pi} \right)}$$

$$m = \frac{1 - \left(1 - \frac{t}{22} \right)^{-n}}{+ \infty}$$



+3.05	+24.9
+1.15	+19.2
+3.40	+18.3
+1.05	+17.5
+1.25	+16.9
+1.94	+16.1
+2.30	+15.8
+1.34	+15.8
+2.31	+15.1
+0.82	+14.9
+2.86	+14.6
+0.62	+14.0
+1.18	+13.7
+1.50	+13.2
+1.31	+12.6
+1.34	+12.2
+0.95	+11.4
+1.25	+11.1



5	20.50	25.00	+0.19
0	6.59	7.19	-1.31
0	2.75	3.00	-0.13
4	9.75	10.00	-1.00
5	81.50	93.00	+3.06
8	2.63	2.88	+0.13
3	9.38	9.38	-0.06
5	2.25	2.56	-0.06
5	18.50	21.00	-4.00
0	6.00	6.91	-0.97
5	39.06	40.31	-2.69
3	1.88	2.06	-0.75
1	8.63	11.06	-4.56
0	16.75	18.50	+2.00
1	19.63	21.44	-7.50
1	13.38	14.44	+0.38
1	16.75	17.25	+0.31



Block

“Math is hard, no question,” he says. “But the problem is that many parents are excusing children when they struggle with math. The truth is that any subject worth pursuing is going to require effort.”

Making the effort to master math is certainly worthwhile in today’s increasingly complex world. If professionals want to make the most of the deluge of data, they’ll want to understand math. In addition, more and more employers are looking for people who can approach problems in a quantitative way.

“Even fields that have not traditionally been quantitative have become quantitative,” says Mark Herschberg, who uses math frequently in his work as a business turnaround executive. “Take marketing. The people I know working in marketing are looking at spreadsheets, trying to analyze how the market will respond if an ad is phrased a certain way. It’s all about the math.”

If you have less-than-fond memories of fumbling through second-year algebra, math may seem like an approaching storm: threatening, unpleasant, and best avoided if possible. But when you look at all the things math can help you do, it’s easier to see math not as a storm to suffer through but as a trusty compass.

The oft-overlooked beauty of math is that it provides a way to efficiently, even elegantly, make sense of the world around us. In the business world, managers are constantly confronted with problems involving constraints, uncertainty, complexity, and change—problems math is specifically designed to address.

Not sure you’re up to the task? Have no fear. Dust off your calculator, grab a pencil, and follow along as we explore the basics of four powerful math concepts—linear programming, probability, input-output analysis, and Markov chains—and how they help professionals make clear, actionable business decisions.

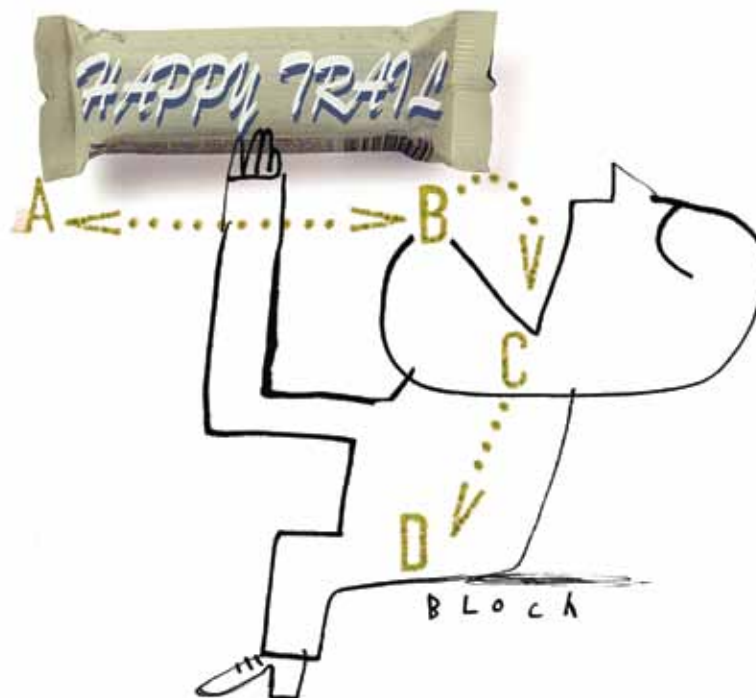
LINEAR PROGRAMMING: MANAGING WITH CONSTRAINTS

How can you feed an army on a budget?

For army organizers during World War II, it was important to keep food costs down. But they also needed to make sure soldiers’ food met standard dietary requirements. To find the right balance of nutritious yet cost-effective foods, they used linear programming.

The army’s meal planning was actually one of the first uses of linear programming, also called linear optimization, which is used to figure out the optimal outcome, such as maximum profit or lowest cost, given certain constraints.

Linear programming came to prominence thanks to



mathematician George Bernard Dantzig, who worked as an advisor to the Pentagon. His contributions to the field evolved out of the military’s interest in optimizing resource allocation, deployment schedules, and, of course, soldiers’ meals.

Today linear programming is used in a variety of ways. Oil refineries use it to determine the optimal combination of gasoline grades; airlines use it to decide how many discounted seats they should sell; delivery companies use it to organize efficient shipping routes. Businesses are always trying to make the most of what they have, and linear programming is arguably the most widely used mathematical tool in business management.

Practice Problem #1: Linear Programming

The owners at snack company Happy Trails know their Classic trail mix has always been a strong seller, but they’re considering introducing a new mix, Fruitylicious. Suppose that each package of Classic mix uses 8 ounces of peanuts and 6 ounces of dried fruit and yields \$1.50 of profit, and each package of Fruitylicious mix uses 4 ounces of peanuts and 10 ounces of dried fruit and yields \$1.00 of profit. Suppose that Happy Trails has 20,000 ounces of peanuts and 30,000 ounces of dried fruit available each day. Should the company introduce a new line of trail mix? If so, how many packages of each variety should it produce daily to yield a maximum profit?

Setup

Here are the basic steps we'll take to solve this problem: determine the variables, set up a system of inequalities, graph those inequalities, then plug the coordinates from the graph into the profit equation.

The variables we're solving for are:

x = number of Classic packages

y = number of Fruitylicious packages

Each Classic package requires 8 ounces of peanuts and 6 ounces of dried fruit. Likewise, each Fruitylicious package requires 4 ounces of peanuts and 10 ounces of fruit. We'll use this information to create a system of inequalities.

The requirements and constraints for the peanuts are represented

$$8x + 4y \leq 20,000.$$

The requirements and constraints for the fruit are represented

$$6x + 10y \leq 30,000.$$

We use the less-than-or-equal-to sign because the amount of peanuts and fruit needs to be less than or equal to the amount available.

Finally, we need to create an equation describing the profit per package. The profit for Happy Trails will be $1.5x$ for each x package of Classic mix and $1.0y$ for each y package of Fruitylicious mix. Thus:

$$P = 1.5x + 1.0y.$$

Our goal is to find the x and y that make the profit as large as possible while satisfying the constraints of this system of inequalities (the last two are included because the answer cannot be negative):

$$8x + 4y \leq 20,000.$$

$$6x + 10y \leq 30,000.$$

$$x \geq 0.$$

$$y \geq 0.$$

Solve

Graph the system of inequalities. To find the coordinates for each inequality, you can set x or y to 0 and then solve for the remaining variable. For example, we can set $x = 0$ for $8x + 4y \leq 20,000$:

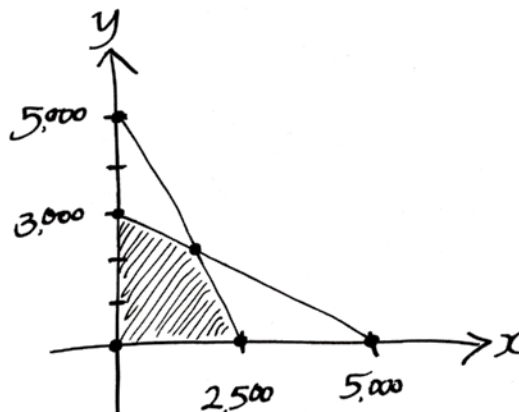
$$8(0) + 4y \leq 20,000.$$

$$4y \leq 20,000.$$

$$y \leq 5,000.$$

This will give us our first coordinates: $(0, 5,000)$. If we set $y = 0$, we can solve for x and find the coordinates $(2,500, 0)$. This means the line for $8x + 4y \leq 20,000$ will be from $(0, 5,000)$ to $(2,500, 0)$. Similarly, we can find that the line for $6x + 10y \leq 30,000$ is from $(0, 3,000)$ to $(5,000, 0)$.

The graph for these lines should look like this:



This can also be done on a graphing calculator. The lines intersect at $(1,428.6, 2,142.8)$. We can plug these coordinates into the profit equation $P = 1.5x + 1.0y$.

$$P = 1.5(0) + 1.0(3,000) = 3,000.$$

$$P = 1.5(1,428.6) + 1.0(2,142.8) = 4,285.$$

$$P = 1.5(2,500) + 1.0(0) = 3,750.$$

The highest profit comes from $x = 1,428.6$ and $y = 2,142.8$.

The bottom line: The Fruitylicious line has a promising future—assuming, of course, that there is market demand for it and that the company's supplies remain consistent. If Happy Trails wants to maximize profits, it should produce 1,429 packages of Classic trail mix and 2,142 packages of Fruitylicious trail mix.

PROBABILITY: MANAGING WITH UNCERTAINTY

How did your teen's car insurance rates get so high? The insurance company would probably tell you not to blame them—instead, blame probability.

Insurance companies rely on probability to estimate the likelihood of certain events occurring, such as who will get into a traffic accident. They incorporate data regarding age, driving history, and other factors. They are in the business of taking on risk for a price. If they want to make a profit and have competitive prices, they must use probability to assess that risk.

Probability has come a long way since its humble beginnings around 1654, when, fittingly, the first comprehensive theory of probability emerged from a pair of mathematicians—Pierre Fermat and

Blaise Pascal—and their friendly dispute over a gambling game.¹ But what happens with probability doesn't just stay in Vegas; it has countless applications throughout the business world, such as the valuation of capital expenditures, option pricing in finance, and quality control in manufacturing. If you're dealing with uncertainty, your best bet is to use probability.

Practice Problem #2: Probability

Tomorrow the FDA is going to announce whether or not it has approved a new drug owned by the privately held XYZ drug company. If the drug is approved, a major shareholder will agree to sell his stock in XYZ for \$50 per share. If the drug is rejected, he will accept \$20 per share. A hedge fund has offered him \$30 today, before the FDA announcement. At what probability is the expected payoff equal to the offer price?

Setup

To solve this probability problem, we'll use a simple algebraic equation. P will represent the probability that the drug will be approved and the share price will be \$50, while $(1 - P)$ will represent the probability that the drug will be rejected and the share price will be \$20. All of this will equal the hedge fund's offer of \$30. Thus

$$P(50) + (1 - P)(20) = 30.$$

Solve

Use algebra to solve for P . First, we'll simplify the $(1 - P)(20)$ using order of operations, which gives us $20 - P(20)$. If we subtract the $P(20)$ from the $P(50)$ that we already have, the equation reads

$$P(30) + 20 = 30.$$

We can then subtract 20 on both sides and divide both sides by 30, which gives us

$$P = \frac{1}{3}, \text{ or } 33.3\%.$$

The bottom line: The hedge fund is estimating that the probability of the drug being approved is at least 33.3 percent.



INPUT-OUTPUT ANALYSIS: MANAGING WITH COMPLEXITY

Does a Grateful Dead concert benefit the local economy?

According to a study in Las Vegas, it does—to the tune of at least \$17 million. To determine the economic impact of the concerts, researchers used input-output analysis, a method designed to analyze the interactions between the various industries within an overall economy. The idea is that outputs from one industry often become inputs for another industry and vice versa. If we're aware of a change in one sector of the economy—such as a concert—we can use input-output analysis to predict how that change will affect the overall economy.

The theory of input-output models was proposed by economist Wassily Leontief, who received a Nobel Prize in economics for his work. Leontief developed a matrix that detailed more than forty sectors of the economy and the web of relationships between their inputs and outputs.³ The resulting model captured the complexity and connectedness of the market and provided a way to view how changes in technology and demand affect production within a regional economy or business sector.

Practice Problem #3: Input-Output Analysis

Next year the city of Numbersville will celebrate its one hundredth anniversary. The director of the visitors bureau is deciding how the city should allocate the funds for its centennial. The projected amount of money coming into the city per day is \$100,000 in space (lodging, attractions), \$100,000 in consumables (food, gas, retail), and \$40,000 in services. It has also been determined that a dollar of space requires 0.2 dollars of space (administration), 0.1 dollars of consumables (cleaning supplies, linens), and 0.2 dollars of services (cleanup, hotel staff). A dollar of consumables requires 0.3 dollars of space (back office, break rooms, storage), 0.2 dollars of consumables (boxes, dishes), and 0.2 dollars of services (wait staff). A dollar of services uses 0.3 dollars of space (worker housing), 0.3 dollars of consumables (workers' meals), and 0.2 dollars of services (management, administration). How many total dollars in space, consumables, and services should be supplied for the celebration?

Setup

To solve this problem, we'll need to solve a system of equations. An input-output analysis is represented by the equation $X = AX + D$, where X is a list of amounts of goods to be produced, A is a consumption matrix, and D is the external demand. Another way of saying this is that total consumption = internal consumption + external demand.

What we're trying to find here is X . Specifically, we're solving for x_1 , the dollars to be supplied for space; x_2 , for consumables; and x_3 , for services.

D is the projected total consumption mentioned earlier. If we use d_1 for the demand for space, d_2 for consumables, and d_3 for services, we could say

$$\begin{aligned} d_1 &= 100,000, \\ d_2 &= 100,000, \\ d_3 &= 40,000. \end{aligned}$$

A will be represented by an input-output matrix, which is basically a table expressing the relationship between each category.

$$A = \begin{matrix} & \begin{matrix} x_1 & x_2 & x_3 \\ \text{space} & \text{consumables} & \text{services} \end{matrix} \\ \begin{matrix} \text{space} \\ \text{consumables} \\ \text{services} \end{matrix} & \begin{bmatrix} 0.2 & 0.3 & 0.3 \\ 0.1 & 0.2 & 0.3 \\ 0.2 & 0.2 & 0.2 \end{bmatrix} \end{matrix}$$

Now we'll plug our figures into the equation $X = AX + D$ to get this system of equations:

$$x_1 = 0.2x_1 + 0.3x_2 + 0.3x_3 + 100,000,$$

$$x_2 = 0.1x_1 + 0.2x_2 + 0.3x_3 + 100,000,$$

$$x_3 = 0.2x_1 + 0.2x_2 + 0.2x_3 + 40,000.$$

Solve

We can use a method called Gaussian Elimination (or row reduction) to solve this system of equations. First we'll isolate the variables on one side of the equation and multiply the first two equations by 10 and the third equation by -5. Thus we have

$$8x_1 - 3x_2 - 3x_3 = 1,000,000,$$

$$-x_1 + 8x_2 - 3x_3 = 1,000,000,$$

$$x_1 + x_2 - 4x_3 = -200,000.$$

Adding the third row to the second and -8 times the third row to the first gives

$$-11x_2 + 29x_3 = 2,600,000,$$

$$9x_2 - 7x_3 = 800,000,$$

$$x_1 + x_2 - 4x_3 = -200,000.$$

Multiplying the second equation by 11 and adding that to 9 times equation one gives

$$184x_3 = 32,200,000,$$

$$9x_2 - 7x_3 = 800,000,$$

$$x_1 + x_2 - 4x_3 = -200,000.$$

NEW CLASS ADDS MATH TO MANAGEMENT

When students walk into a math class, they're usually less than thrilled to be there. This was often the case with a calculus course that was, until recently, required for students applying to the Marriott School. Now the school is requiring a new course called Finite Math.

"I think students will see this class differently," says associate professor Jeffrey Humpherys of the BYU Math Department. "They'll find that it will be reinforced in their business courses."

Although the calculus taught in the previous course provided intellectual rigor, faculty from the Marriott School and the math department saw a need for curriculum focused on practical skills. Humpherys, who taught a similar course at another university, worked with Brent Wilson, professor of finance and Marriott School director of undergraduate programs, and other faculty to fine-tune Finite Math, which premiered last semester.

The class gives students an arsenal of practical math skills that will help them solve real-world business problems—and tackle more advanced concepts in later courses. Some of the topics covered include permutations, probability, linear programming, and Markov chains.

In its first semester, the class received positive feedback from students. "I think this is a more realistic approach," says Kevin Hatch, a sophomore premanagement major who plans to study strategy. "The class emphasizes making businesses more efficient, and I think that will help me be a better consultant for companies in the future."

Wilson says he hopes students will not only gain knowledge of specific principles but also a new perspective of math.

"I've taught for thirty years," he explains, "and I've noticed a lot of students get scared when I put an equation on the board. We want students to be comfortable with math. Most important, we want them to be able to think quantitatively as they approach management decisions."

If we divide both sides of the first equation by 184, we see that $x_3 = 175,000$. Now we can plug that value into the other two equations and simplify to get that $x_2 = 225,000$. Further simplification yields the solution

$$x_1 = 275,000,$$

$$x_2 = 225,000,$$

$$x_3 = 175,000.$$

The bottom line: The city can prepare for a celebration that will require \$275,000 in space, \$225,000 in consumables, and \$175,000 in services.

MARKOV CHAINS: MANAGING WITH CHANGE

What's the secret behind the PageRank algorithm that launched Google to search engine stardom?

Although many of the details are under wraps, what isn't a secret is that the concept of Markov chains influences PageRank. Markov chains provide an efficient framework for understanding the uncertain evolution of a system. They're used to describe a process in which there is one possible "state" at any given time and to analyze the transitions between those states. In the case of Google, each web page would be considered a state. Thus the PageRank rating of a particular page would reflect the probability that a random web user would transition to that state, or web page.

The concept of Markov chains, which was first developed in 1906 by a mathematician named Andrey Markov, is used in a variety of ways. Its practical applications include market research analysis, stock and bond pricing models, and speech recognition programs.

Practice Problem #4: Markov Chains

The marketing team at Sparkle, a toothpaste company, wants to launch a new ad campaign: "Seize the Sparkle!" Before they spend their advertising dollars though, they want to know how much of an effect the campaign is likely to have. According to their focus-group research, someone who has seen the ad and has previously purchased Sparkle toothpaste has a 70 percent chance of continuing to purchase it, while someone who has seen the ad and has most recently purchased a different brand has a 48 percent chance of switching to Sparkle. Assuming that consumers buy toothpaste once a month, how much can Sparkle, which currently holds 32 percent of the market share, expect to see its market share increase after a month-long ad campaign?

Setup

To solve this problem we'll determine our transition probabilities, put them into a transition matrix, then multiply the matrices we create.

Markov chains are all about calculating the probability that the system will move from one state to another. Here the state in question is which toothpaste brand a consumer uses. We'll represent the options like this:

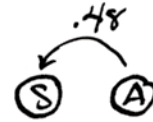
S = uses Sparkle brand

A = uses another brand

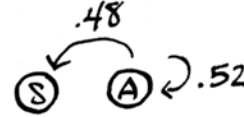
The probability of the system moving from one state to another is called the transition probability. We can illustrate these probabilities in two ways: a transition diagram and a transition matrix. For the diagram, we'll start with two circles, one with S and one with A.



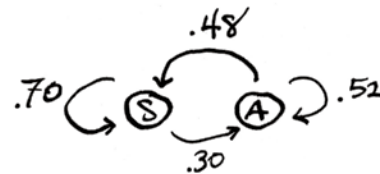
First, we'll use an arrow to indicate the probability of moving from A to S (48 percent will become .48).



The complement would be that there is a 52 percent chance of staying at A.



We'll also include arrows to indicate the probability of moving from S to A (30 percent) and of staying at S (70 percent).



Now we'll illustrate these probabilities in a different way, as a transition matrix,

$$\begin{matrix} & \begin{matrix} \text{(to)} \\ S & A \end{matrix} \\ \begin{matrix} \text{(from)} \\ S \\ A \end{matrix} & \begin{bmatrix} .70 & .30 \\ .48 & .52 \end{bmatrix} \end{matrix}$$

The S and A to the left of the bracketed section represent the current state (from); the S and A above the bracketed section represent the next state (to).

We also need to create a transition matrix to reflect the information about Sparkle's market share of 32 percent. In probability terms, we could say there is a 32 percent chance that a random consumer will be a user of Sparkle toothpaste. We can express it

$$\begin{matrix} & S & A \\ \text{CURRENT} \\ \text{MARKET SHARE} & = & \begin{bmatrix} .32 & .68 \end{bmatrix} \end{matrix}$$

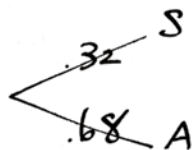
The solution we're seeking will reveal Sparkle's likely market share after one month of the campaign.

Solution

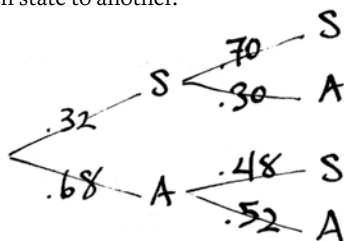
To determine the new market share, we'll want to multiply the two matrices.

$$\begin{bmatrix} .32 & .68 \end{bmatrix} \begin{bmatrix} .70 & .30 \\ .48 & .52 \end{bmatrix}$$

If you're familiar with matrix multiplication, either by hand or on a calculator, you can go ahead and do that. Otherwise, one way to solve this problem is using a tree diagram. First, we'll create two branches indicating Sparkle's current market share.



Next, we'll include branches to indicate the probability of moving from each state to another.



Viewing the probabilities this way can help us write it out in equation form:

$$\begin{aligned} P &= (.32)(.70) + (.68)(.48) \\ &= .22 + .33 \\ &= .55 \end{aligned}$$

The first part of the market-share matrix is

$$\text{NEW MARKET SHARE} = \begin{bmatrix} S & A \\ .55 & ? \end{bmatrix}.$$

We can simply subtract .55 from 1.00 to determine the remainder of the matrix to create

$$\text{NEW MARKET SHARE} = \begin{bmatrix} S & A \\ .55 & .45 \end{bmatrix}.$$

The bottom line: After a month-long campaign, Sparkle is likely to see a significant increase in market share—from 32 percent to 55 percent. Clearly something to smile about!

ADDING IT ALL UP

Tough decisions are a fact of life in the business world, but you don't have to rely solely on intuition to make the right choice. When faced with challenges, an understanding of math concepts can help you make more informed decisions and, like Charlesworth, make a convincing case for the decisions you make.

When you pay attention, you'll see that numbers really do tell a story. You may even find that—heaven forbid—you enjoy math. After struggling through a lengthy and difficult equation, it's hard not to feel an exhilarating sense of accomplishment.

In his job as an analyst, Charlesworth uses math every day. But in his eyes, that's a good thing. "Math is your ally," he says. "You just have to know how to use it." **M**

Notes

1. Lorraine Daston, *Classical Probability in the Enlightenment*. Princeton, New Jersey: Princeton University Press (1988): 15–18.
2. Ricardo C. Gazel and R. Keith Schwer, "Beyond Rock and Roll: The Economic Impact of the Grateful Dead on a Local Economy," *Journal of Cultural Economics*, 21.5 (1997): 41–55.
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About the Author

Holly Munson is a writer trying to love solving equations as much as she loves diagramming sentences. She graduated from BYU in 2010 with a degree in communications and lives in Philadelphia with her husband, Dave.


Marriott Alumni Magazine expresses appreciation to professor Jeffrey Humpherys for lending his technical expertise to this article.



BY EMILY SMURTHWAITE

by the NUMBERS

The Social Medium

If the internet is an information superhighway, social media is a road hog. The web is increasingly being used as a way to connect with chums, strangers, and even celebs. Here's a snapshot of how the internet has befriended us. 



60

THE NUMBER OF
MEMBERS LINKEDIN
IS ADDING PER MINUTE.

LinkedIn is the social site with a professional twist; it makes Rolodexes look as ancient as wagon wheels. The site has more than 85 million members and is growing fastest overseas. If you haven't used this tool to electronically link your network, it's time to take the plunge.

TIP: Most people won't connect with others they haven't met. Unless you have a legitimate association, don't reach out to strangers—it will look like you're trying to schmooze.

Source: mashable.com

65

THE PERCENT OF ADULTS
WHO USE SOCIAL
NETWORKING SITES.

What originally started as a domain for teens has quickly turned into a free-for-all for anyone with bandwidth and time to spare. Daily usage by Boomers, ages fifty to sixty-four, of social media sites grew 60 percent from 2010 to 2011.



TIP: Double check your profiles to ensure no personal information, such as your address, is made public.

Sources: *The Pew Internet*
and *American Life Project*

\$200 MILLION

THE ESTIMATED VALUE OF SOCIAL MEDIA NEWCOMER PINTEREST.

Pinterest is the chic way to express your style and avocations. A virtual bulletin board launched in 2010, this site allows you to bookmark other web pages and browse what your friends are posting. From decor and gift ideas to book recommendations, photo tips, and recipes, this virtual scrapbook is a great online organizer. (And who doesn't need that?)

TIPS: The site is still in beta and can be tricky to navigate. Find a friend or an online tutorial to get started, request an invite from pinterest.com, and, once you're approved, start virtually pinning. Only follow those you know—even Pinterest can have an edgy side.

Source: allthingsd.com



800 MILLION

THE NUMBER OF ACTIVE FACEBOOK USERS.

When it comes to social networking, Facebook wasn't the first but it is certainly king. This site enables you to keep tabs on those you don't see often, share pictures, and even snag discounts from your favorite retailers. Now if we could only get Mark Z. to stop messing with the template.

TIPS: Like any online hobby you enjoy, Facebook can easily suck you in. If you find yourself a little too involved with Facebook, take a break from it for a week. This will temper your reliance on it and maybe even remind you that the world will not stop spinning if you don't update your status. But do check out facebook.com/marriottschool.

Source: facebook.com/press



230 MILLION

THE NUMBER OF TWEETS EACH DAY.

Looking to complain about a company, catch up on what your friends are thinking, or receive dating advice from Justin Bieber? Twitter is your answer. This 140-character microblogging spot has created a way to spread information and to reach out to those who otherwise seem inaccessible.

TIPS: Watch out for direct messages that are spam or worse. Also be aware that hundreds of accounts have been hacked at some point, so don't take every tweet for fact. The Marriott School tweets too: twitter.com/marriottschool.

Source: huffingtonpost.com



January

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
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BATTLING THE WINTER BLUES

BY ROB ROGERS PHOTOGRAPHY BY BRADLEY SLADE

It doesn't take much to make you feel blue: gray clouds hanging low in the sky or buzzing fluorescent lights casting a cold, clinical pallor. Often the weeks after Christmas become the start of a bleak and seemingly endless winter. You're pensive and it's hard to function at work and at home.

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*Friends and
 co-workers play an
 important role
 in helping people
 stay mentally*
HEALTHY
*by providing
 outlets for emotional
 expression.*
 ...

Managers see it. Productivity in the office starts to dip. The staff seems listless. People are missing work.

Do you recognize it? It seems harder to get out of bed in the morning, and those activities that seemed enjoyable even a month ago now feel dull and tedious.

This malaise can be widespread. An estimated 25 million Americans experience the winter blues while an additional 14 million people nationwide experience a more serious seasonal depression.

John Matthews is vice president of information technology and chief information officer for F5 Networks, a tech firm in Seattle. He says there is a noticeable change in mood when winter starts.

"It's dark in the morning when you get to work and dark when you get home," he says.

Winter in the Pacific Northwest can be brutal, Matthews continues. It's not particularly cold during those early months, but it's always gray. He says the city can go weeks without seeing the sun.

So his office fights back. Employees pull the blinds up on office windows and bring in lamps for extra light. This year Matthews had full-spectrum fluorescent lights installed. These lights emit more colors from the light spectrum than traditional fluorescents—improving the mood and well-being of the employees when there's little sunlight streaming in.

After the holidays Matthews takes

additional steps to brighten the mood. He'll order in a hotdog cart to roll through the office or bring in a portable cocoa machine—something goofy or fun that gets employees' attention and breaks up the winter monotony.

"Those things can be very positive," he says. "Anything I can do to help is to my advantage as a manager."

Scott Sears, a family practice physician and doctor of internal medicine in Billings, Montana, regularly sees the toll sunless days take on people. He commends Matthews and others who employ similar techniques. Light, he says, is the answer to winter doldrums. It's a biological fact that sunlight makes people happy.

"Serotonin is the main hormone in the body that regulates these moods," he says. "And light exposure increases your serotonin."

When it's dark, the body produces a hormone called melatonin, which helps regulate a person's sleep-wake cycle. Long winter months and shorter days can impact melatonin levels in the body, so exposure to sunlight becomes that much more important, Sears adds.

When patients come in during the winter feeling blue, Sears tells them to seek light. Exercising regularly outdoors in natural light can cure a lot of ills, he says. If that's not an option, exercise indoors under artificial light.

He also tells patients to get a good night's rest and to get out of the house and be social. Friends and co-workers play an important role in helping people stay mentally healthy by providing outlets for emotional expression, he says. In most cases, an afternoon outing with a friend is as good for mental health as anything he could prescribe.

Russ Cherry believes giving assistance is vital. For him a manager's job is to help employees find a meaningful connection to their work. Disruptions, especially those brought on by cold, dark weather, can cause all kinds of problems, he says. Managers need to understand how best to handle those disruptions.

"We're creatures of habit. People like their rhythms, and seasonal changes disrupt their rhythms," he explains.

Cherry is a business consultant and founder of Dream Big, an organization that works with companies to boost employee performance and strengthen the bottom

line. For employees to be at their best, they have to tap into their jobs both intellectually and emotionally, he says.

Most people have an intellectual connection with what they do at work; they understand their tasks and know what needs to get done. The problem, Cherry says, is fewer people have fostered emotional connections. Change the weather, set back the clock, and shorten the days, and all of a sudden that lack of an emotional connection can become a problem.

For example, someone who has spent his day running dozens of system analyses probably won't go home at the end of the day feeling a deep emotional connection to his work and, by extension, the company. "That's not life changing," Cherry adds.

Rather, he says, the employee needs to understand how what he does helps the company and its clients. A nurse, for example, can view his day as a series of menial tasks, or he can see that what he does allows a mother to feel healthy enough to receive a visit from her family. Cherry says, "Understanding your impact—that's life changing."

A sales rep understands that her performance directly benefits the financial health of the company. But to help build a better emotional connection to work, she needs to understand that a healthy company will better execute its stated mission. That helps the sales rep feel more connected to the overall purpose of the company and helps her understand that what she does is important on various levels, Cherry says.

An emotional connection leaves employees feeling satisfied with what they do. That, in turn, has a positive impact on home life—especially during the winter—further helping the employee to feel good. When it's time to go back to work, that employee is often better off than the day before.

Employees who have that emotional connection are better prepared when the weather turns bad. Cherry says it's the difference between simply performing tasks and understanding why they're done.

But sometimes winter blues are more than just feeling bummed because the thermometer hasn't moved above freezing or because the sky is dull and dark.

Profound feelings of depression that come on during the winter, lasting more



...

EMPLOYEES

*who have that emotional connection are better prepared
when the weather turns bad.*

...

than three months and returning each year, can be symptoms of seasonal affective disorder. It's a serious condition that requires treatment, says Holly Willard, a licensed psychotherapist at Wasatch Family Therapy in Cottonwood Heights, Utah.

Be aware of how long feelings of sadness or depression persist and how constant they are, Willard says. Serious signs of the disorder include prolonged feelings of isolation, thoughts of suicide, increased sleeping and eating, irritability, and frequent crying.

A diagnosis of actual seasonal affective disorder typically happens when the symptoms recur over two or more winters.

Holidays are often the trigger. “There’s something of a letdown after the holidays,” Willard says. “And sometimes the holidays themselves are a source of stress and angst.”

According to Seattle Children’s Hospital, about 4 to 6 percent of Americans suffer from seasonal affective disorder and another 20 percent report experiencing at least one or two of the symptoms during the winter. The disorder tends to strike more with older teenagers and adults in their 20s, 30s, and 40s. The disorder also tends to be more common in women—they’re four times more likely to experience it than men.

Not surprisingly, the rates of diagnosis are higher in colder and darker states. About 1 percent of Floridians experience seasonal affective disorder while nearly 10 percent of those living in New Hampshire suffer from it.

To help, experts have offered a number of tips on how managers can recognize and reduce the winter blues in the office. There

are also things employees can do to feel better and to keep productive during those long winter months.

RECOGNIZING WINTER BLUES IN YOUR OFFICE

1. DROPS IN PRODUCTIVITY. Work by individual employees slows down. Often there is a significant or sudden increase in office absenteeism and a noticeable drop in completed assignments.

2. DECREASED MORALE. Winter blues bring noticeable drops in enthusiasm, camaraderie, and productivity among staff members. For some it can make tasks, assignments, or activities that once seemed enjoyable feel mundane or tedious.

3. HEIGHTENED IRRITABILITY. Feelings of depression are often expressed through increased irritability. An employee’s anger will begin to affect other co-workers or clients and interfere with assignments.

4. FEELING HOPELESS. Employees may experience a general increase of feelings of apathy or hopelessness, which can lead to a withdrawal from social circles. They become disengaged from co-workers and managers and sit more in isolation.

5. INCREASED APPETITE. Some find themselves eating more and seeking out foods high in carbohydrates, like sweets and salty snacks. Those foods become increasingly appealing because they trigger the pleasure centers of the brain, which often don’t get the stimulation they need during the winter.

6. FATIGUE. Signs of winter blues also include increased sleepiness during the day and sleeping more at night. Feelings of fatigue make work harder to do and compound other symptoms of depression.

7. GENERAL MOODINESS. Crying spells often increase and mercurial jumps and dips in mood will occur, adding to the loss of office morale and increasing the stress other employees may feel.



• • •

The body needs

SUNLIGHT.

*It helps produce
vitamin D and serotonin
and affects the amount
of melatonin in
the body, all of which
affect mood and
levels of happiness.*

• • •

HELPING YOUR EMPLOYEES

1. PLAN OFFICE ACTIVITIES. Training and employee team-building exercises are usually built into the office calendar. Try leveraging those activities. As a way to break up a monotonous schedule, use Fridays as your day for group activities and office-wide training. When the training is finished, office-wide contests can be another way to motivate employees and help keep their spirits up. Provide daily updates to keep people excited about a competition or contest.

2. HOLD A WINTER OFFICE RETREAT. Plan your yearly office retreat during the winter. Waiting for late February or early March can help give your employees something to look forward to following the holidays.

3. ENCOURAGE A BREAK. Sometimes just a day off or a long weekend is enough to help people feel refreshed and ready to focus on work again. So if you've got an employee who seems especially tired or strung out, give her a day away to go do something that will help get her reinvigorated.

4. BE AN ATTENTIVE MANAGER. Pay attention to your staff. Good relationships fostered throughout the year will help you tackle issues that come up during the winter. Make sure lines of communication are open and clear.

5. WORK INDIVIDUALLY WITH EMPLOYEES. Address issues that come up individually with employees. Generally, that's going to be more effective than instituting an office-wide approach. If serious performance issues arise, you may need to implement more personalized support, which could include changing an employee's tasks.

6. INVOLVE THE HR MANAGER. Should an employee's winter blues coalesce into actual seasonal affective disorder, you'll want to make sure—for legal and productivity reasons—that you've documented it with your HR manager and kept your interactions with that employee confidential. You want to be forthright and direct as well as sympathetic and understanding when dealing with these issues.

7. AVOID GIMMICKS. A brightly colored, well-intentioned gimmick can put off employees. Office decorations or snappy slogans used to address general office malaise in the winter aren't as effective as personalized leadership and one-on-one direction for those who need extra help.

HELPING YOURSELF

1. EXERCISE. Few activities will do more to improve mood than regular exercise. If running around the neighborhood isn't an option because of weather or location, find a gym. Join a basketball, volleyball, or even dodgeball league. Take up lap swimming. Pilates or yoga can be especially helpful. Exercise coupled with some type of meditation or meditative process is good for the body and for your brain.

2. GET LIGHT. The body needs sunlight. It helps produce vitamin D and serotonin and affects the amount of melatonin in the body, all of which affect mood and levels of happiness. If your desk or cubicle is in the middle of the office, work with your boss to

have it moved closer to a window. If being next to an office window isn't an option, use a sunlamp. Light therapy or phototherapy is an easy way to introduce sunlight into your day. Sunlamps are relatively inexpensive, are available at most stores, and can be set up at home or on your desk.

3. EAT SMART. Maintaining a good diet is important year-round, but it's critical during the winter. A good diet improves your mood and increases your energy levels. Stay away from extra fats and carbohydrates, and eat plenty of fruits, vegetables, and proteins.

4. VACATION IN A SUNNY LOCALE. Rather than use all your paid time off around Christmas or New Year's, plan a vacation somewhere warm and sunny for February or March. It gets you out of the cold and dark and gives you something more to look forward to following the holidays.

5. BE SOCIAL. Bulk up your post-holiday calendar with get-togethers or outings. Plan simple activities like a lunch date with an old friend or a night out at a new restaurant with your spouse.

6. KEEP YOUR ROUTINE. If you're starting to feel blue and it gets hard to function, make sure you've got a daily routine that requires you to be up and around doing various activities, including getting yourself to work. A regular routine can keep you moving when it's hard to function or find motivation.

7. GET HELP. Sometimes sunlamps and swimming laps aren't enough. If feeling blue becomes serious and stretches into a third month, it's time to talk to someone. **M**

Sources: Dr. John B. Bingham, associate professor in the Department of Organizational Leadership and Strategy at the Marriott School of Management, Brigham Young University; Holly Willard, LCSW psychotherapist at Wasatch Family Therapy; Russ Cherry, CEO of Dream Big Consulting; John Matthews, vice president of information technology and chief information officer of F5 Networks; Scott Sears, MD, Yellowstone Medical Center; U. S. Bureau of Labor.

ABOUT THE AUTHOR

Rob Rogers is a reporter with the Billings Gazette in Montana. He graduated from BYU in 2001 with a degree in communications.

School News

BYU Moves Up in U.S. News 2012 Best Colleges Rankings



BYU jumped up four spots to seventy-first in the *U.S. News & World Report* 2012 Best Colleges rankings. BYU also surged seven spots to thirteenth in the “Great Schools, Great Prices” category while holding steady at the No. 3 spot for best accounting programs.

The 350-page 2012 *Best Colleges* guidebook ranks more than 1,400 four-year accredited colleges and universities. BYU falls into the category of “national universities,” which includes schools that offer a full range of undergraduate majors, plus master’s and doctoral degrees.

This year, BYU is also ranked eighth in the category of “Least Debt,” which compares the average debt carried by departing graduates. The Marriott School is ranked thirty-sixth in the category of undergraduate business programs. In specialty categories, the school moved up three spots to fourteenth in international business while also registering twenty-first in entrepreneurship.

Four Years Family Strong

The Marriott School is adding another title to its collection, but this one has been seen before. For the fourth year in a row, the Marriott School has been voted the most family-friendly business school in the United States by The Princeton Review.

The 2012 rankings also name the school No. 7 for most competitive students. The results were taken from the opinions of more than 19,000 students in 294 MBA programs.

“BYU’s MBA program provides a world-class education with excellent placement opportunities in a setting where family relationships are valued and supported,” says Craig Merrill, director of the MBA program.

During the past ten years, 60 to 80 percent of MBA candidates have been married. To accommodate this high number, the MBA Spouse Association was established.

“The MBA Spouse Association provides a place to gather for socials and educational events, which lead to lifelong friendships,” Merrill says. “For our married students, the choice of MBA programs is as much a family choice as a professional development decision.”

The complete rankings and two-page profile are published in *The Best 294 Business Schools: 2012 Edition*.

BYU Tops Professor Ratings Site

It’s a place many students love to turn to when picking their professors, and now RateMyProfessors.com has returned the love, naming BYU the top college for the 2010–11 school year.

The list of top twenty-five colleges is determined by student reviews of professors and overall campus life.

On the popular site, students rate professors on a five-point Likert scale in the areas of helpfulness, clarity, and easiness. Each professor’s overall quality score is an average of their clarity and helpfulness ratings. BYU professors’ average overall quality is a very respectable 3.62, but what pushed the university to the top of the list were students’ ratings of campus life. BYU has an overall school rating of 4.5, with student happiness rated 4.8.

Professors in the Marriott School averaged an overall quality rating of 3.94, based on reviews for 105 faculty members. Students frequently commented on the knowledge, friendliness, rigor, and

spirituality of Marriott School professors.

RateMyProfessors.com is the largest professor review website, with more than 10 million student reviews of 1 million professors around the world. BYU has nearly 3,000 ranked professors on the site—one of the largest representations from reviewed schools.

Rollins Center Hosts Entrepreneur Week



The Rollins Center for Entrepreneurship and Technology celebrated the spirit of creativity and innovation by hosting BYU’s first-ever Entrepreneurship Week at the end of September.

“Our inaugural attempt at pulling off an event as large and ambitious as E-Week exceeded our expectations,” says **Scott Petersen**, managing director of the Rollins Center. “We were able to serve more than 3,000 students campus-wide, holding entrepreneurial events and competitions in nearly every college and department on campus.”

The events and activities let students know about entrepreneurial resources and motivated them to start their own companies. Events included the Mobile App Competition, an entrepreneur networking night, Utah Startup Marketplace, Entrepreneur Mentoring Extravaganza, Business Plan and Business Model competitions kickoffs, and the Student Innovator of the Year competition.

“It was exciting to create a buzz on campus and see students be inspired when they realized they can be their own bosses and take hold of their futures,” says **Lauren Olsen**, CET assistant director. “It’s empowering for them to see the possibilities they can give themselves.”

Career Initiative Boosts Job Placement



Hundreds more Marriott School graduates were hired in 2011 than in 2010, resulting from an intensified focus on placement and a slowly recovering economy. Placement rates increased by 14 percent for graduate degrees and 5 percent for undergraduate degrees in 2011, reaching 91 percent and 76 percent, respectively.

The school's focus on helping students find careers is founded in its placement initiative, a \$10 million endowment that is currently being established with the objective of overcoming BYU's geographic

isolation in the Mountain West. The goal is to double the number of companies that students come in contact with by 2015, resulting in the consistent placement of 90 percent of students within three months of graduation and an increase in the number of job offers each student receives.

"BYU students are phenomenal, but they're not well known in some areas of the country," says **Jim Engebretsen**, assistant dean for corporate relations. "Provo is more than 600 miles from most major employment centers, while many other business schools are located just a subway ride away from companies. We don't have that proximity, so we've got to get creative."

Engebretsen and a team of career services staff are working to facilitate the process of meeting with and interviewing employers. Their efforts also include increasing interview and résumé training

for students, organizing trips for students to visit employers, and marketing the Marriott School to companies.

Austin Boaz graduated in 2011 with a bachelor's in accountancy and took several trips to New York City while studying at BYU. As a result of his visits, Boaz was hired in 2010 for a summer job by Lazard Ltd., an investment bank in New York City. After Boaz graduated, Lazard offered him a full-time position and later returned to BYU to hire two more students.

"Our graduates are our best marketing tool," Engebretsen says. "Oftentimes just one graduate has opened opportunities for many students to follow."

Executive Director of Utah Department of Commerce Receives Wright Alumni Award

BYU's Romney Institute of Public Management awarded **Francine Giani**,

School Unveils George E. Stoddard Honor Wall

Members of the **George E. Stoddard** family, along with Marriott School administrators and faculty, gathered at the unveiling of a display in the Tanner Building honoring George and his wife, **Elma**. The wall is a tribute to their generosity in the form of prizes and awards that will benefit Marriott School students for years to come.

The beautifully designed display, on the second floor of the Tanner Building, features photographs and a brief biography of George, a 1937 BYU business graduate, and Elma Stoddard.

"We are greatly honored to associate the Stoddard name with the Marriott School," says **Gary Cornia**, Marriott School dean. "I believe we have world-class faculty and students, and we need opportunities for the world to see them. That's what the Stoddards are doing with their gifts—giving students the ability to launch their careers and make a difference."

Most recently Elma established the Stoddard Career Advancement Awards. The awards help business students offset travel costs for interviews in leading commercial centers. This year's awards will help about seventy-five students. The number of awards given each year is expected to increase to more than three hundred by 2021.

In addition to the Career Advancement Awards, the George E. Stoddard Scholars program was established in 1985 to recognize outstanding second-year BYU MBA students pursuing careers in finance.

According to **G. Evan Stoddard**, George and Elma's son, his parents' generosity stems from the high value they placed on education and diligence. At age sixteen, George Stoddard left his home in Queens, New York, to study at BYU. When he graduated in 1937, he was the only Utah student



Elma Stoddard and Patricia Stoddard Welch unveil the George E. Stoddard display.

awarded a scholarship to attend Harvard Business School, where he earned a master's degree. He married Elma Skelton in 1942 while serving in the U.S. Navy. Years later, as an insurance executive in Manhattan, Stoddard earned a law degree from Fordham University.

Stoddard served as director of W.P. Carey and Company and chair of its independent investment committee. His co-workers there described him as a hardworking and humble man. He worked full-time at W.P. Carey until 2005, when he and Elma moved to Utah.

"We appreciate the legacy our parents have given us, for always being kind and generous people," says George and Elma's daughter, **Patricia Stoddard Welch**. "I know my parents wanted to make it possible for other people to go out into the world and be a light."



executive director of the Utah Department of Commerce, with its 2011 N. Dale Wright Distinguished Alumni Award. The award is one of the most esteemed accolades given by the institute.

"Francine embodies the values that we believe a public servant should hold: tireless service, a relentless defense of

the public good, and grassroots volunteerism," says **David Hart**, director of the Romney Institute.

The recipient is chosen annually by the Romney Institute faculty to recognize a graduate who has demonstrated service and leadership in the work environment and community; maintained and exhibited high standards of excellence; and gained the respect and loyalty of colleagues, peers, and family. The award was named for former Romney Institute director and professor of thirty-three years **N. Dale Wright**, who attended the luncheon and presented Giani with a painting he made for her.

Giani was appointed executive director of the Utah Department of

Commerce in July 2005 by Governor Jon M. Huntsman Jr. As executive director, Giani is responsible for policy making and management over six division directors. Her department is responsible for the regulation of hundreds of industries and the issuance of more than 300,000 licenses.

More recently, Giani was appointed by Governor Gary R. Herbert as the Department of Alcoholic Beverage Agency's temporary head, following the discovery of mismanagement and corruption within the department.

Giani said, "I am deeply touched to be recognized by my peers with this award. I salute present students who are working on their MPA degrees. Today it may seem

Focusing Social Innovation in Nation's Backyard

Social innovators usually focus their attention on foreign countries. But for at least one BYU student participating in the Peery Film Festival, social innovation is just as important domestically.

Kenji Tsukamoto, a film major from Kaysville, Utah, packed his video equipment last May and joined four other BYU students as they headed to Oakland to capture the story of Youth Ventures, an international program that encourages youth to launch social ventures.

"There is so much attention given to social problems abroad," Tsukamoto says. "But it is equally important to realize that those very same problems are found domestically."

The four short films the Oakland team made, along with three others from BYU students who traveled to Ecuador and the Dominican Republic, premiered at the second annual Peery Film Festival. The festival is presented by the Ballard Center for Economic Self-Reliance and the BYU Department of Theatre and Media Arts. The Ballard Center worked to connect the students with organizations that could use visual publicity.

"One of the overarching goals of the Ballard Center is to get students linked up using their skill sets in this world of social innovation," says **Todd Manwaring**, managing director for the Ballard Center. "In this case, it is tying film students with entrepreneurs who lack films about their causes."

The Peery Film Festival is an example of students helping others by bringing their talents to the table. It also shows how students can network with others to support a cause.



"I would love to continue working on short documentaries to tell the stories of people who are trying to do similar things," Tsukamoto says. "Being able to work with these kids and to see the projects they are creating and implementing through the help of Youth Venture was truly inspiring."

like getting to graduation is your main goal, but you never know where that degree will take you or how you will use your MPA tool kit.”

Giani graduated with a Bachelor of Arts in communications from Hunter College and went on to work briefly at ABC News. Previous to her appointment in the Utah Department of Commerce, Giani served as a press secretary and policy advisor to former Utah governor Norman H. Bangerter from 1984 to 1992 and as a Centerville City Council member from 1992 to 2000. She was appointed director of the Division of Consumer Protection in 1992, where she strengthened consumer protection laws in the state of Utah.

BYU Ranks Second in the Nation for Entrepreneurship

BYU’s entrepreneurship students are some of the best prepared to start their own businesses, according to a recent survey by The Princeton Review for *Entrepreneur* magazine. BYU’s Rollins Center for Entrepreneurship and Technology graduate and undergraduate programs came in at No. 2 and No. 7, respectively. This is the second year in a row both programs have made it in the top ten, with the graduate program moving up two spots.

The Princeton Review surveys more than 2,000 colleges each year to rank the nation’s top programs. Colleges were evaluated based on key criteria in the areas of teaching entrepreneurship fundamentals in the classroom, staffing departments with successful entrepreneurs, offering excellent mentorship, and providing entrepreneurial opportunities outside of the classroom, as well as including distinguishable aspects in their programs.



Winners of First Walmart Business Case Competition

The details made the difference as judges chose the winning team of the inaugural Walmart Business Case Competition, held at BYU on 29 September.

Thirteen teams of two to four undergrad students were given ten days to draft marketing strategies for



From left: Andrea Thomas, senior vice president of Corporate Affairs Sustainability at Walmart; Amie Isom; Chris Huntington; Ryan White; Steven Hall; and Gary Severson, senior vice president and general merchandise manager at Walmart.

new Walmart Express stores. After an initial round of presentations, judges narrowed the competition to four finalist teams that were judged by Walmart senior executives.

“All four finalist teams presented with energy and passion; in the end they were separated by the thinnest of margins,” says **Sam Dunn**, senior vice president of finance at Walmart Global Sourcing. “The winners were selected not because they were the most polished or entertaining, but because they paid attention to small details and gave solid answers to difficult questions.”

Dunn and a panel of five other Walmart executives chose the winning team, which consisted of **Amie Isom**, a marketing senior from Bountiful, Utah; **Chris Huntington**, a supply chain senior from Littleton, Colorado; **Steven Hall**, a supply chain junior from West Jordan, Utah; and **Ryan White**, a marketing senior from Salt Lake City.

Michael Thompson, Marriott School associate dean, credits the Rollins Center for giving students real-world entrepreneurial skills beyond corporate management.

“Entrepreneurship takes a creative idea, but it also takes creative business thinking to get that idea to a marketplace,” Thompson says. “The Rollins Center teaches entrepreneurship as a way of seeing the world, solving problems, and identifying opportunities that don’t always come with traditional business education.”

More than 4,000 students enroll in BYU entrepreneurial courses each year, and numerous graduates start their own successful businesses.

Forbes Ranks BYU MBA No. 15 on ROI

It looks like an MBA from BYU is well worth the opportunity cost and risk, according to *Forbes* magazine’s biennial list of best business schools. The BYU program placed fifteenth for return on investment—one spot ahead of its position in 2009, which was the last time

Forbes published the list.

Alumni respondents to the survey emphasized the preparation and strong network of the BYU MBA program, saying they still feel connected years after graduating.

Forbes sampled thousands of 2006 MBA graduates from schools around the country to compare their current salaries to what they earned before completing school. The magazine reports the total return on investment after subtracting what a student’s salary would have been and the total cost of attending, including tuition and foregone compensation.

BYU MBA graduates gained \$81,000 during the course of five years by attending graduate school, breaking even after 3.1 years—the fastest return of any school on the list. Five years after graduation, the average salary of BYU MBA alumni was \$108,000, compared to \$47,000 before entering the program. The BYU program had the lowest tuition of any school ranked in the top forty-five.

Harvard came in at the top of the list, followed by Stanford and the University of Chicago.

ROTC Cadets Connect Doctors and Patients in Ecuador



For some Ecuadorians, BYU's Army ROTC cadets gave a new meaning to the word *lifeline* as they provided the most crucial link between doctor and patient: communication.

Nine BYU cadets interpreted for medical patients in Ecuador as part of Operation Continuing Promise, a humanitarian-service mission by the Department of Defense. Their work took them to makeshift clinics in local elementary schools and on board the USNS *Comfort*.

"This was a wonderfully unique experience that helped Ecuadorians receive medical treatment in a way they could understand," says **Lt. Col. Marc Boberg**, professor of military science and the trip's advisor. "Our cadets helped put smiles on the faces of those who might not have been able to receive the same medical attention for a very long time."

The team was joined by two cadets from other participating universities and helped more than 9,200 patients during the two-week mission. The elementary schools housed everything from eye exams to tooth extractions. Patients requiring surgery were taken on board the *Comfort*, a military hospital ship.

"The best part about being on the ship was seeing the patients after their operations," says **Cadet Michael Ahlborn**, a sophomore majoring in microbiology from Houston. "In every case they expressed joy and appreciation for receiving such great medical care."

The experience also provided the cadets with enhanced foreign language experience, culture immersion, and experience with the military outside the role of combat. At the conclusion of their medical service, the cadets toured Ecuador on a diplomatic mission. They visited the U.S. embassy to learn about the role of the United States in Ecuador and visited Ecuadorian government institutions, including the presidential palace.

STUDENT NEWS

Ambassadors Announced

Business savvy, a passion for international travel, and excellent presentation skills set seven Marriott School students apart and earned them the title of the Whitmore Global Management Center's first Global Ambassadors.

After a thorough interview process, a group of six professors and professionals selected the students out of more than forty applicants. As alumni of Whitmore Center study abroad programs, ambassadors will promote internationalism by representing study abroad programs and hosting international businesspeople at the Marriott School. In return for their efforts, students will receive a \$250 stipend at the end of the semester.



From left: Harsh Vora, Emily Eckley, Scott Nelson, Nicholas Romano, Timothy Colvin, Amie Isom, and Christopher Law.

The inaugural group of Global Ambassadors consists of **Harsh Vora** from Gujarat, India; **Timothy Colvin** from Preston, Idaho; **Amie Isom** from Bountiful, Utah; **Scott Nelson** from Orem; **Emily Eckley** from Elizabeth, Colorado; **Nicholas Romano** from

Tooele, Utah; and **Christopher Law** from Gilbert, Arizona.

"They're enthusiastic about their study abroad experiences and the fact that every student at BYU could have a similar life-changing experience," says **Sherstin Creamer**, program director for the center.

“Each of them has a sincere desire to make a difference in another student’s life.”

Ambassadors will work with students and program directors while learning leadership skills as they interact with visiting international businesspeople. Among their responsibilities are promoting study abroad programs by giving presentations, video blogging on international topics, and sharing their knowledge of international business with other students.

ROTC Team Wins Ranger Challenge



Cadets Beck and Richards unclip Cadet Argyle from the one-rope bridge during practice for the competition while Cadet Boice looks on.

BYU’s Army ROTC team triumphed once again in the annual Ranger Challenge competition, making this the twenty-eighth time BYU’s team has won first place in the past thirty years.

A few of the extra challenges the nine team members had to overcome this year included a 2,000-foot increase in altitude, blizzard conditions, and unfamiliar terrain. The competition was held 6–8 October at the U.S. Air Force Academy in Colorado Springs, Colorado.

The competition included several tests of mental and physical endurance: a written exam, a physical fitness test, a one-rope bridge challenge, an obstacle course, a hand grenade assault course, a land navigation activity, and a nighttime ruck march. All the teams were given an outline of the events and how they would be scored before the semester started, allowing them to train for the specific events.

Team member **Anna Savage**, a linguistics sophomore from Highland, Utah, says the most difficult challenge was the ten kilometer ruck march, which began that Saturday night with each team member carrying a forty-five-pound rucksack.

As cadets made their ways over hills and obstacles, they were given extra equipment to carry, such as five-gallon water cans, sandbags, and a fifty-five-gallon drum. Despite the unfamiliar terrain, the BYU team came in first, finishing twenty minutes before the other teams.

Beta Alpha Psi Wins Prestigious Ethics Award

Since 1965, BYU’s Gamma Alpha chapter of Beta Alpha Psi (BAP) has been serving on campus and in the Provo community. This year it reached out to a new audience of local high school students—a move that made it stand out from 270 international applicants to win \$5,000 and the first-ever Beta Alpha Psi 2011 Ethics Award.

“We wanted to reach out to high school students because we felt that accounting and other financial service careers aren’t always discussed with that age group,” says **Mike Larkin**, a recent BYU master of accountancy graduate who headed the project. “We thought that hosting a learning activity for high school students would really make an impact.”

BAP brought together seven teams from two high schools to compete in an ethics case study competition. The teams were given resources to formulate a written answer that was judged by chapter members.

The outcomes of the competition, which included a greater awareness of ethics for chapter members and participants as well as increased knowledge of ethical dilemmas in the accounting field, were contributing factors to winning the award.

In addition to allocating their \$5,000 winnings to expanding the case competition for next year, BAP has also taught mini finance classes to troubled youth and conducted VITA labs that assist people with their taxes free of charge.

“As the advisor, I love watching students



have an idea and take the initiative to do something new and different,” says **Cassy Budd**, accounting professor. “Because they’re passionate about these important issues, things happen.”

Whitmore Center Global Summer Study Abroad Programs Change Thinking



The Mediterranean Business Study Abroad group poses in front of the Wall of Reformers in Geneva, Switzerland.

Reading headlines about the Greek debt crisis is one way to stay informed about current events. But for twenty-eight BYU students, talking directly to a chief officer at the second largest bank in Greece seemed a lot more intriguing.

“You’re definitely not going to get that perspective in the United States,” quips **Bruce Money**, marketing professor and director of the Whitmore Global Management Center’s new study abroad program to the Mediterranean.

Money’s program was one of seven study abroad programs offered by the center this summer. Students were given the opportunity to visit prominent companies and meet with top officials.

The Mediterranean Business Study Abroad featured trips to Nike in Istanbul and DHL in Rome and included a small side trip to the world headquarters of Nestlé in Switzerland—among many other business visits and cultural excursions. The Nestlé visit became a student favorite—and not just because of the free chocolate. Ryan Frome, an exercise science major from Albany, Oregon, says he enjoyed learning about Nestlé’s focus on serving customers and their nutritional

goals, which applied directly to his major. "I was able to get a feel for what it is like to work in business, which gave me some insight on my future career," Frome says. "One day I will be a business owner, so it was useful to see how corporations operate behind the scenes."

Experiences like these were frequent in all programs, which included an accounting study abroad to London and a global marketing study abroad that stopped in India for the first time on its trek through New York, Asia, and Europe. There were also business study abroad itineraries to Europe, China, Italy, and Asia, where students were able to make an inaugural trip to Mongolia.

FACULTY NEWS

Professors Win Award for Best Accounting Ranking Methodology



Scott Summers and David Wood

Two accounting professors from BYU were honored with the Best Paper Award from the *Issues in Accounting Education* journal for their work in spotlighting others' research.

BYU School of Accountancy professors **Scott Summers** and **David Wood** are recipients of the annual peer-voted award for creating a ranking methodology based on university research publications.

Covering twenty years of academic journals, the research took more than three years to complete. The professors created a system that ranked universities based on the number of articles their professors had published in top accounting journals. The complete findings are available online at byuaccounting.net/rankings, a website created to organize and publish the rankings.

The voters consisted of members of the American Accounting Association. They voted for the best paper published in the quarterly journal from the previous year.

"This is a peer-voted award, suggesting that accounting professors believe the rankings we have created add significant value to the profession," Wood says.

Universities that excel in less prominent research areas such as tax, managerial systems, and audit are now able to be recognized for their studies and advancements. Summers says this ranking system shines light on areas in accounting research that are sometimes overshadowed by more traditionally published areas of study, like financial research.

Wood and Summers were joined by full contributing co-authors and BYU accounting alumni **Josh Coyne** and **Brady Williams** in writing the paper. Coyne and Williams are currently working on their doctoral degrees at the University of North Carolina and the University of Washington, respectively.

Professor Receives Maeser Teaching Award

Known for his engaging lectures and colorful Hawaiian shirts, Marriott School professor **E. Kay Stice** was recently awarded the prestigious Karl G. Maeser Excellence in Teaching Award. The award, presented to three Brigham Young University professors at the Annual University Conference, is based on university citizenship, rigorous instruction, and research or creative work.

"Kay Stice engages the mind and heart of students," says **Michael Thompson**, Marriott School associate dean. "He understands how important the architecture of a course is—how important the details and the design of classes really are. Add to that his incredible wit and a sense of the comedy of life, and year after year we have students say he is one of the best teachers they've ever had."



Stice began teaching at BYU in 1998. Recognized for the positive learning environment of his classes, Stice received the

Marriott School's Merrill J. Bateman Award for Outstanding Faculty in 2008, the Marriott School Teaching Excellence Award in 2004, and numerous other outstanding teaching awards from other universities.

Stice earned his bachelor's and master's degrees in accountancy in 1981 and 1982 from BYU and his doctorate from Cornell University in 1988. Before teaching at BYU, Stice taught at China Europe International Business School, Rice University, University of Arizona, and the Kellogg-Hong Kong University of Science and Technology executive MBA program. Nominations for the Karl G. Maeser Excellence in Teaching Award are submitted by faculty peers and emphasize course evaluations, activities in course development and improvement, the scholarship of teaching, and innovation.

Romney Institute Director Joins State Optimization Council



Utah governor Gary Herbert appointed **David Hart**, director of the Romney Institute of Public Management, to

join a new state council looking to give Utah an economic and managerial boost. Hart and other Utah leaders will focus on cutting costs, streamlining services, and bettering the Beehive State.

The Advisory Council on Optimizing and Streamlining State Government is charged with reducing costs, consolidating agencies, and improving management practices in upwards of forty state agencies—essentially trimming down expenses while beefing up benefits for Utahns.

Hart's background in public administration and strategic management makes for a unique addition to the cause. Governor Herbert has also assembled an array of leaders from business, government, and community and state agencies to join Hart, the only academic on the council.

"I represent the educational side of management and the strategy behind public administration," Hart says. "Because I work at a private university, I hope to contribute an objective perspective."

Alumni News

MANAGEMENT SOCIETY

Dallas, Fort Worth Chapters Host Education Day



On a Saturday in September the Dallas and Fort Worth chapters of the Management Society hosted their second-annual Education Day Symposium for youth in the area. More than thirty high school students attended the event at a

Dallas stake center to learn about educational opportunities after high school.

"Two years ago the chapters wanted to do a service project for the community," says **Jarem Hallows**, past chair of the Education Day Committee. "They decided to hold a mentorship program whereby high school students could learn how to further their education after high school."

Hallows says the Management Society has focused its initial efforts in serving areas in the community where large percentages of high school students aren't enrolling in post-high school educational programs.

To encourage students to pursue education after high school, the committee designed workshops that focused on educational opportunities, such as certificate programs, community

colleges, trade schools, and four-year universities. Another workshop focused on financial aid, including federal grants, private scholarships, and public school scholarships.

"You could tell it just clicked with a lot of kids," Hallows says. "Many of them didn't know they had the opportunity to further their education after high school."

Hallows said one of the most important aspects of the program was pairing students with mentors from the Management Society. Mentors talked one-on-one with students to help them identify the next steps in their educational endeavors. They also exchanged contact information to follow up with students.

"We tried to do something that was consistent with one of the Management Society's core objectives—to assist people

Law and Order

Just four years after completing her joint JD/MPA degree, **Kristi Anderson** has become a rising star in the Navy JAG Corp. As a prosecuting attorney and a naval officer, Anderson handles a variety of civilian and military cases. She credits her time at the Marriott School for giving her an extra boost in skills and experience to land the job and excel in her responsibilities.

"Getting an MPA set me apart from other candidates who had just a law degree," she says. "I knew the great combination of skills would be helpful wherever I ended up in the legal sector."

Anderson started her career as the legal advisor to the commanding officer at Naval Base Kitsap—Bremerton in Washington State. Soon after, she was deployed to Afghanistan for ten months to work in detainee operations. While there, Anderson was the sole JAG officer responsible for legal review of every detainee the United States wanted to transfer to long-term detention facilities. It was a heavy responsibility that Anderson says helped her grow immensely.

"It was a great opportunity to get out from behind a desk and explore the legal process," she says.

From administrative law to fiscal and contract issues, Anderson has had opportunities to gain exposure to



all aspects of the legal process. She has thrived in the ambitious atmosphere of the Navy, saying her BYU experience was great preparation for her career.

"In the Navy you are expected to take on a lot of responsibility right from the start," she says. "I feel fortunate that I had the expertise to step up to the plate."

Anderson says she enjoys the opportunity to lead a team of fellow JAG officers. As she continues to thrive, her workload and leadership responsibilities will only increase, something that energizes Anderson.

"The duties I have been given to work on confidential national security investigations and the involvement I have had far exceeded my expectations," she says. "This is a unique and wonderful opportunity."

with their careers,” says **Peter Harris**, president of the Dallas Chapter. “This can start in high school by matching mentors with students. We wanted to use our resources to benefit the rising generation.”

The Education Day Committee looks forward to holding other similar symposia in the Dallas–Fort Worth metro area. Additional stakes in the Dallas area have already requested the program, and Harris says he hopes to eventually make it a community event at local high schools.

“It’s my favorite event that we do all year,” Harris says. “I feel we make a significant difference in the lives of youth.”

BYU Management Society Hosts Women in Business Conference

Successful businesswomen, professionals from various disciplines, and female students gathered at the Marriott School to discuss relevant issues concerning women in the business world at the first Women in Business Conference, held 28–29 October.

At the event, hosted by the BYU Management Society and the Marriott School, corporate professionals and entrepreneurs spoke at breakout sessions focused on a variety of pertinent topics, including balancing work and family, dealing with uncertainty in careers, and starting and growing a business. More than two hundred women from twenty-one states attended the conference.

“The number and variety of people who came—working women, stay-at-home moms, students, and entrepreneurs—gave attendees the opportunity to learn from one another, share ideas, and network, which was a major focus of the conference,” says **Rixa Oman**, executive director of the BYU Management Society.

Participants network at the Women in Business Conference.



Suite Dream



Matt Jarvis is a sports fan who doesn’t have to separate business from pleasure. After growing up playing a number of sports, he now has a job many young boys dream of—working for the National Football League.

Jarvis graduated from the Marriott School with a degree in business management in 2003. He then moved to Oregon, where he worked as a senior account executive for sports marketing firm Game Face. The position put him in contact with dozens of major sports teams

and gave him an inside look at professional sports.

In 2008 Jarvis made the jump to the NFL and became the premium seating account manager for the Miami Dolphins, where he sold suites and club seats to local businesses. Miami provided an opportunity for more than just NFL games. Within a span of two years, the stadium hosted both the BCS National Championship and the Super Bowl, giving Jarvis the opportunity to work in the heart of the busy sales division.

“Those were larger-than-life events,” he says, adding that feeling the energy and buildup around each event was a surreal experience.

In 2011, Jarvis moved to the St. Louis Rams as a senior premium seating sales executive. His gratification for the hard work of the off-season, Jarvis says, is one of his favorite parts of the job: when the season starts with a full stadium and energetic support for the team.

During football season his responsibilities grow to include hosting potential clients and assisting existing customers. He uses game day to build his clientele and meet people.

Jarvis realizes he is living the dream by working in the competitive industry of professional sports and says he hopes to continue his rise in the NFL marketing and sales world.

Jarvis and his wife, Kristi, live in Missouri with their three young boys. They enjoy spending time together as a family and, of course, playing sports.

At a dinner Friday night, BYU professor **Jeffrey Hill**, from the School of Family Life, and Chrysula Winegar, work-life balance coach, spoke about different approaches to work-life balance. The event also featured keynote speakers **Cathy Chamberlain**, managing director of market strategy for Deseret Book Company; **Linda Daines**, managing director for private client services at Goldman Sachs; and **Jan Saumweber**, senior vice president of the Global Walmart Team for Sara Lee Corporation.

Daines spoke about her personal journey to Goldman Sachs and gave advice on how women can handle their unique challenges.

“You’re the only one who can and should make decisions for your life,” Daines said. “You have to hold on to your confidence; it’s your duty to yourself and to your spirit.”

Many women at the conference enjoyed associating with others in similar situations. **Megan Nelson**, a 2009 BYU graduate, says she sometimes

feels isolated, being one of the few LDS businesswomen in her area. She says it was an uplifting and powerful experience to meet other LDS businesswomen and share experiences.

"I was touched by the spirit of faithful sisterhood at the conference and felt encouraged being among others whose righteous pursuits in learning and leading have inspired me to do the same," Nelson says.

A networking lunch on Saturday gave attendees the opportunity to visit with professionals representing diverse areas in business, such as accounting, entrepreneurship, health care, and nonprofit.

"The conference helped me continue building a network of women with similar goals and interests," says **Christie Foley**, a senior in accounting and president of the Marriott Undergraduate Women in Business Club. "I met accountants who have made careers work with their other responsibilities. It was refreshing to hear about the opportunities and career paths women can take while achieving goals they have as wives and as mothers."

CLASS NOTES

1976



Debbie Stott Glazier graduated from BYU with an MPA in 1976. Since then she has worked as a compensation analyst at a number of public and private organizations around the country, most recently at the University of Nevada, Las Vegas, before her retirement in 2008.

Glazier is a dedicated community member with a lengthy list of service involvement, ranging from being an active PTA member at the local elementary school to volunteering as a Meals on Wheels driver for five years. Glazier also competitively raced a nineteen-foot Flying Scot sailboat as a member of the Cowan Lake Sailing Association in Ohio. She placed tenth at the national championships and won many other races over the span of a decade.

Glazier and her husband, Patrick, have two children and live in Henderson, Nevada.



For **Stephen W. Johnson**, managing a branch of Raymond James Financial Services is a family affair. His brother and a

son work alongside him in the Utah practice, and his wife even designed the office.

Johnson graduated in business management from BYU in 1976. He earned his insurance license two years later, and in 1990 he opened an office with Raymond James, one of the largest financial services companies in the United States. Johnson's practice covers two main areas—wealth management for local business leaders and retirement plan consulting.

Aside from his position on the Raymond James Chairman's Council, Johnson contributes to a number of local organizations, including consulting for Children's Miracle Network and managing funds for the Utah Arts Council.

He and his wife, Connie, live in Alpine, Utah. They have four children and eight grandchildren.

1979



Alan J. Durrant's lengthy career spans a variety of real estate and development activities throughout Colorado and Idaho,

ranging from a real estate start-up to an assisted living center development.

He recently became director of real estate for Café Zupas, a Utah-based restaurant chain. There he performs market analyses, site evaluations, and lease negotiations for the restaurant's rapid expansion. Durrant says he enjoys being at the heart of a growing and developing business.

Durrant earned his Macc from BYU in 1979. He and his wife, Holly, have four children and ten grandchildren and live in Utah.

1983

Ross Tate earned his BS in business administration from BYU in 1983. He later received the designations of Certified Management Accountant and Certified Internal Auditor and went on to work for Maricopa County, Arizona. For the past seventeen years Tate has been director of



internal audit, where he promotes accountability and strong internal controls within the county. During the past ten years he has made

recommendations that have saved the county, the fourth most populous in the United States, nearly \$23 million.

"As a personal challenge, I have striven to inject creativity into the traditional world of auditing—without compromising professionalism," says Tate, who is known for making the county's reports interesting and accessible for both citizens and executives.

Tate was recently elected president of the Association of Local Government Auditors (ALGA), where he has served as an executive officer since 2006. The ALGA features a membership of government auditors from around the world.

Tate and his wife, LaRae, have four sons and live in Phoenix.

1986



Allen R. Hoopes has been with Silver Star Communications from nearly the company's beginning. When he

joined the telecommunications organization after graduating in business in 1986, he was the ninth employee. Now as chair and CEO he oversees 105 employees and almost 10,000 customers and has helped build both the company and the communities it serves. He has worked on constructing broadband infrastructure in rural Idaho and Wyoming, providing communities with the technical resources they need for the future.

"Without broadband connectivity to the rest of the world, a community's economy, workforce, and job opportunities are very limited," he says.

Hoopes has served on a number of regional and national telecommunications boards and recently completed a term as chair of the Rural Telephone Finance Cooperative Board, a billion-dollar bank specializing in telecommunications lending.

Hoopes and his wife, Jamielyn, have five children and live in Bedford, Wyoming.

Always on His Feet

Gary Gustafson, a 1994 MPA graduate, is a man who just keeps going. His career is full of accomplishments and adventures, but his endurance continues outside the office.

Gustafson has completed twenty-eight marathons and three ultramarathons of more than fifty miles, including the Boston Marathon eight times and the St. George Marathon for fourteen straight years. He once ran four marathons in eleven days.

Gustafson's passion for running translates into the zeal he has for his life and career.

After returning home from his mission, Gustafson spent eight years in the Utah National Guard, working his way up to sergeant. He spent time as a linguist and counterintelligence agent, traveling to Hawaii and Japan for exercises with the Japanese military during the Cold War.

"It was like playing a giant game of Risk with maps laid out in a huge warehouse," he says. "The computers would simulate troop movement and provide various scenarios to which the officers would react."

When he completed his MPA with emphases in health care and finance, Gustafson joined the Utah Health Policy Commission, where he consulted political leaders on health policy issues. He moved to the private sector a few years later, working as a benefit consultant on health care plans for Fortune 500 companies with William Mercer Incorporated. He simultaneously spent three years as an adjunct faculty member at Mountain West Junior College in Salt Lake City, where he taught a variety of business courses and received the Outstanding Faculty of the Year Award in 1999.

In 2001 Gustafson moved to his current position as a consultant with Fidelity Investments, advising companies on their benefits packages and training junior associates. He says his favorite parts of the job are the opportunities to help clients and the variety of each day.

"The field is always changing, and with health care reform there are many questions in the eyes of employers about how to save money, offer value, and provide employees with the necessary health care coverage they will need to be healthy and productive," he says, noting how rewarding it is to help companies through these large decisions.

Gustafson's active lifestyle doesn't stop when he leaves the office. He is past president of the New Hampshire Chapter of the BYU Management Society. He also serves as vice president of the ISCEBS Boston Chapter and as bishop of his local ward.

Gustafson and his wife, Susan, have four children and live in Merrimack, New Hampshire, where he plans to keep his family-centered life active and moving—just like he does when running a race.



1989



Chris Brady, a 1989 MPA graduate, works as city manager of Mesa, Arizona, but his passion for public service goes back

decades. He was first attracted to civic government through a lengthy internship with the local mayor's office while he was in school. There he was exposed to industry professionals and was able to network and learn from a variety of public servants.

With a career of municipal government posts in Texas and Arizona, Brady has a current position overseeing the economic and community development

of Mesa, the third fastest-growing city in the United States. He says he regularly uses his educational and career experiences to come up with creative solutions to the city's challenges.

Throughout his career, Brady has realized the importance of his education and how he can continue to grow and give back. He regularly meets with other BYU alumni to network and help them any way he can. He also has helped a number of BYU students work or intern for the city of Mesa. "There is great value in young talent, and we're doing our part to help the next generation of city leaders," he says.

Brady and his wife, Shawna, have four children and live in Mesa.



Cheryl Anne Nichols graduated from the Marriott School with a BS in business management in 1989. She earned a master's

degree in communications from the University of Washington in 2004, specializing in digital media. Nichols has been a consultant at Microsoft Corporation for four years, where she works with Microsoft's Central Marketing Group on internal communication strategy and cultural and digital media programs.

Nichols is active in her community and is currently president of the Seattle Chapter of the International Association of Business Communicators. In that

role she plans professional development events and social media strategies. She is also co-founder of Social Media Breakfast Seattle, which provides educational events on digital media topics.

An avid traveler, Nichols has visited twenty-eight countries and has lived in three. During one of her stays abroad, she spent six months teaching English at a university in China. Nichols currently resides in Kirkland, Washington, where she enjoys hiking, bicycling, and photography.

1990



Sterling Tanner, a 1990 finance graduate, works as president and executive director of the Forever Young Foundation.

He was also recently named chairman of the board at One Life at a Time, an organization that aims to fight poverty in Central America through vocational training and humanitarian aid.

Tanner has more than twenty years of experience in the nonprofit sector and currently sits on the boards of

numerous charitable and for-profit organizations, including the ANASAZI Foundation and Huntsman Gay Global Capital. In his various positions he has drawn attention to these causes through organizing a number of charity events featuring celebrities.

Tanner says he loves the impact of nonprofit organizations and being able to use his talents to help people around the world. He is a member of the Arizona Chapter of the BYU Management Society and is a Paul Harris Fellow at Rotary International.

He and his wife, Brenda, have three children and live in Gilbert, Arizona.

1991



Clint Argyle, a 1991 graduate in marketing, calls himself a serial entrepreneur. Since leaving BYU he has started and run

several companies, including Argyle Driven International, 1 Utah Homes, and 123 Genealogy. Among other responsibilities, Argyle is a board member and vice chairman of Prime Alliance Bank, a

community bank he started with local business leaders in 2004. Argyle also led KeyStone Learning Systems as president and CEO during its rapid expansion and sale in 2001.

He is a regular guest speaker in entrepreneurship classes at BYU and BYU-Idaho and serves as a Founder in the Rollins Center for Entrepreneurship and Technology. An avid hunter and adventurer, Argyle also volunteers with the Boy Scouts of America and the Rotary Club. He and his wife, Sherry, have four children and live in Spanish Fork, Utah.

1995



After graduating with an MPA in 1995, **Philip Sanders** moved his young family to Texas, where he has since worked in local govern-

ment. He is city manager of Anna, one of the fastest-growing cities in the Dallas-Fort Worth area. Sanders also serves on the board of directors for the North Texas Groundwater Conservation District, helping the arid region better utilize Anna's vast groundwater resources.

First Glimpse at History



Gregory Cornell has had a front row seat to history. After graduating from BYU in finance in 1985, he joined the U.S. Army and served his first four years in Germany at the end of the Cold War.

"The Berlin Wall came down and an LDS temple was built in East Germany while I was there," he says. "Those really were once-in-a-lifetime experiences."

Cornell continued active military service, rising to the

rank of captain, until he transitioned to the South Carolina Army National Guard in 1996. With his military service now just a few weeks a year, he began full-time work in the South Carolina Department of Juvenile Justice, first as director of health services and then as director of planning and programs. When he began, the state's juvenile detention facilities and programs were struggling. During his time of service, Cornell opened five new

health clinics and applied for grant money to start a number of new statewide projects, including work-training and employee stipend programs for juvenile offenders.

Cornell was reactivated for military service in 2003 and 2004, spending time overseeing training management at eleven southern U.S. Air Force bases and completing an eleven-month tour of duty as an executive officer in Afghanistan.

In 2009, Cornell began working as an analyst in the Army solutions division of General Dynamics, a defense contractor focused on military training. In this role he travels the country preparing brigades for battle and designing simulations to replicate the rigors of combat.

"We train leaders to prepare them for battle and for the unique organizational challenges they will face," he says. "We have a unique opportunity to help our troops be as prepared as they can."

Cornell acknowledges that his schooling and career have given him a unique perspective on history in the making.

"My education helped prepare me for understanding that when things are happening around you, it's a significant thing," he says. "I'm grateful for all I've been able to experience."

Cornell lives with his wife, Deborah, in Elgin, South Carolina. They have four children and four grandchildren.

New BYU Management Society Chapters

- Porto Alegre, Brazil
- Fortaleza, Brazil
- Calgary, Alberta, Canada
- Lethbridge, Alberta, Canada
- Toronto, Ontario, Canada
- Fort Worth, Texas
- Leipzig, Germany
- Honolulu, Hawaii
- Magic Valley, Idaho
- Marriott School Student Chapter

Before moving to Anna, Sanders spent twelve years as city planner and community development director for neighboring Greenville, Texas. He says his career in local government has been extremely rewarding as he works to better the lives of community members each day.

Sanders and his wife, Amy, live with their seven children in Anna, where they love attending community events and supporting the high school marching band.

1997



Jason Glass's current position as director of investment operations and client relations at GM Asset Management in New York City has

him overseeing one of the company's largest areas and managing a variety of accounts. Glass worked for a number of hedge funds after graduating and has now been with GM Asset Management for nine years.

Glass earned his BS in finance from the Marriott School in 1997 and his MBA from the University of Maryland in 2002. He loves hiking and biking. Glass and his wife, Kristy, live with their two children in New York.

1998



Marc R. Rogers is experienced in the transportation and trucking industries. After working his way up in the industry for

fourteen years, Rogers currently works as senior vice president at Schneider National, the largest privately owned trucking company in North America. In this role he oversees the company's \$1 billion truckload revenue. He previously worked for Knight Transportation as a division manager and as director of national accounts. Rogers is also a member of the Marriott School Supply Chain Advisory Board. He is active in his community and enjoys coaching his son's eighth grade basketball team.

Rogers graduated from the Marriott School in marketing in 1998 and earned his MBA from the University of Phoenix in 2002. Rogers and his wife, Allyson, live in De Pere, Wisconsin, with their five children.

2000



Kirsten Kent knows that running a family is a lot like running an organization. The 2000 management graduate now applies

her business savvy to her household by creating family budgets and spreadsheets to run her busy clan.

Kent has also applied her skills to a number of small businesses. She is bookkeeper for her husband's graphic design company, and she runs a small piano lesson business. Kent and her sister also own and operate Two Hot Mama's Flowers, where they arrange flowers for local weddings and other events. She is chair of the local chapter of the BYU Alumni Association.

Kent and her husband, Jonathan, live with their four children in Camarillo, California.

2002



In less than a decade since graduating with his MBA in 2002, **Jeff Driggs** has lived in and worked in some of the world's largest business hubs.

He started his postgraduation career as a senior financial analyst for Intel in San Francisco before moving to London to work as a transaction services director for PricewaterhouseCoopers.

His current position as director

of technical accounting policies at Thomson Reuters has him living in New York. He advises the company's \$6 billion professional business sector on proper accounting in such industries as science, tax, and health care. Driggs earned both his BS in accountancy and his MBA from BYU. He and his wife, Christeena, a Broadway actress, live in New York with their young daughter.

2004



Immediately after graduating in entrepreneurship in 2004, **Matthew Plewe** began his career in commercial real estate valuation

as an appraiser with PGP Valuation, now known as Colliers International Valuation & Advisory Services.

In 2008, Plewe joined NewTower Trust Company, where he works as a valuation officer. He oversees quarterly valuations of industrial, retail, residential, and development land in prominent markets around the United States.

Plewe married his college sweetheart, Bethany. They have three children and live in Sammamish, Washington, where Plewe loves working with the Cub Scouts.

2008



Less than a year and a half after graduation, **Landon Budge** took his wife on the adventure of a lifetime—moving from Boston to Tokyo

to continue his work at Bain & Company. While there the finance graduate expanded his global horizons and worked on a variety of strategy and due diligence projects.

In September 2011, Budge joined the technology protection group Asurion as a corporate planning analyst. Budge is part of a small team with the big task of fixing or replacing millions of lost or damaged phones.

The cultural experience of living in Japan was enhanced when Budge and his family contributed to relief efforts in the wake of the 2011 earthquake and tsunami. Budge says he is eager to help any way he can in the continuing relief efforts.

Budge and his wife, Rebecca, live with their two young children in Tokyo.



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