winter 2007

Wharton

ALUMNI MAGAZINE

Direct Connection

Real-world impact from faculty/industry research collaborations

Also: Professor Maurice Schweitzer Tells the Truth About Deception

Professor Olivia Mitchell and a research team from Vanguard and Wharton

Wharton
University *of* Pennsylvania

TOMMY LEONARDI

April 12-13
The 2007 Wharton Economic Summit: Next Moves in a Global Economy
Location: Philadelphia, Pennsylvania Convention Center

Join world leaders in business, academe, and government as they discuss key economic issues and challenges. Expanding on the 2006 sold-out event in New York (pictured above, Michael Milken, WG'70), the 2007 Wharton Economic Summit brings together experts on more than 30 panels, with topics including executive compensation, global outsourcing, international human rights, hedge funds, and leadership in sports and media ventures.

At this special Wharton Anniversary event, you'll gain valuable knowledge of today's global business climate, from venture capital and private equity, to real estate and family business, to emerging markets and emerging technologies.

Register online: ‹125th.wharton.upenn.edu/summit›

Events Calendar

FEBRUARY 2007

February 16
MBA Student Conference: Health Care Conference
Location: Philadelphia, Park Hyatt at the Bellevue
‹www.whcbc.org/›

February 16
MBA Student Conference: Restructuring Conference
Location: Philadelphia, Union League
‹www.whartonrestructuringconference.org›

February 16
MBA Student Conference: Media & Entertainment Conference
Location: New York City
‹www.mbamec.com›

February 23
MBA Student Conference: Technology Conference
Location: Philadelphia
‹www.whartontechconference.com/

MARCH 2007

March 23
MBA Student Conference: Social Impact Management
Location: Philadelphia
‹www.simconference.org›

APRIL 2007

April 12-14
Wharton Economic Summit: featuring top faculty, alumni, and industry leaders
Location: Philadelphia, Pennsylvania Convention Center
‹125th.wharton.upenn.edu›

April 15-20
Executive Education: The CFO: Becoming a Strategic Partner
Location: Philadelphia, Steinberg Conference Center
‹execed-web.wharton.upenn.edu/course.cfm?Program=CFO›

MAY 2007

May 10-13
Reunion Weekend 2007
Location: Philadelphia
‹www.wharton.upenn.edu/alumni/reunion›

Don't forget to visit WAVE to learn about alumni club events that are happening in your region.

COVER . ED ECKSTEIN
PICTURED: WHARTON PROFESSOR OLIVIA MITCHELL; VANGUARD'S WILLIAM NESSMITH, GARY R. MOTTOLA, AND STEPHEN P. UTKUS, WG'84; WHARTON DOCTORAL CANDIDATE TAKESHI YAMAGUCHI

For updated information visit **‹www.wharton.upenn.edu/whartonfacts/news_and_events/calendar/›**

Wharton

ALUMNI MAGAZINE

Winter 2007

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Regaining trust that has been broken

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JIM GRAHAM

MICHELLE ANTONIO, W'91

MBA Career Management Director Reports 2006 Results

The 2006 MBA career placements indicate a job market that has returned to pre-millennial strength. But MBA Career Management's new director, **Michelle Antonio**, W'91, is intent on putting systems in place that work for good markets — and bad.

This year 94% of reporting 2006 graduates who sought job offers received them. 92% accepted them, for a median compensation package of $137,000. Nearly a fifth of graduates (19.2%) accepted non-U.S. positions, as median compensation for international jobs ($143,000) was buoyed by more competitive salaries in Asia. Those excellent numbers are about the same as 2005, but they are a far cry from the 80% job acceptance rate of the difficult 2003 market, when Antonio joined Wharton MBA Career Management (MBACM) as a senior associate director.

Antonio, an undergraduate alumna of the school, has now experienced both kinds of labor markets, both as a career consultant and as a job seeker. She graduated from Wharton amid the hiring slump of 1991, and later benefited from an employment boom when she earned her MBA from the University of Chicago's Graduate School of Business in 1997. Prior to rejoining Wharton, Antonio served as an MBA recruiting director at Deloitte Consulting, a consultant at Bain & Company, and an account executive at Information Resources Inc.

"The biggest priority we're working on this year is to make the recruiting process more efficient for both students and employers," she says. "With the economy back on the uptick, the hiring marketplace has become very competitive again. Employers are all jockeying to attract the best and the brightest, and last year that led to a proliferation of events where every employer tried to outdo their competitors."

While that sounds like an advantage to job-seekers, in practice a heavy recruiting schedule can take over student calendars, leaving too little time for the academics and extracurriculars that drew them to Wharton.

Antonio's goal is to decrease the burden of recruiting on students and employers, while maintaining mutual access. To help, MBACM pushed back the start date of club recruiting events until Q2 of this year and introduced a new bidding system so students are able to bid for interview slots.

The changes are part of a long-term plan to create a flexible system. "We don't want to beg companies to come when the economy is bad and turn them away when it's good," Antonio explains. "We want a model that is sustainable and works in many situations — to maintain strong relationships with the employers at all times and focus on quality of contacts and interviews, as opposed to quantity."

As in many good employment years, MBA students turned to traditional employers — consulting (28.7% of jobs accepted) and financial services (44.2%, including 26.0% to investment banking and increasing interest in private equity/VC/buyouts and hedge funds). The technology (5.2%), health care (4.9%), and consumer products/retail (4.9%) sectors were strong, and there was continued growth in the numbers of students pursuing careers in media and entertainment (3.5%) and real estate (4.6%).

Wharton and Graduate School of Education Introduce Interdisciplinary Program

Organizations that encourage and facilitate a culture of learning among employees often outperform those that do not.

Now Wharton has partnered with Penn's Graduate School of Education (GSE) to launch an innovative degree program to prepare those leaders. The Executive Program in Work-Based Learning Leadership, the first top-tier university program of its kind, provides a formalized education in business, leadership, technology, and strategy within the context of work-related learning. The goal is to enable the learning leader, often called the chief learning officer (CLO) or head of talent development, to function at the same strategic level as the rest of the senior executives in their organizations. The program welcomes its first class in January 2007.

The program allows students to continue working while they study. Doctoral and master's students are expected to ground their research, their master's theses, and their dissertations in the workplace rather than in academia. Individuals not interested in a degree are able to complete individual course blocks relevant to their needs and will receive a certificate.

Both in the number of students and in the amount of money spent, workplace learning now dwarfs higher education.

"Most adults learn on the job rather than in a formal educational setting," said Doug Lynch, vice dean at GSE, which will grant the degrees. "The average Fortune 1000 company spends 2.5 percent of its operating budget on learning. For many of these companies, that amounts to tens of millions of dollars." Because many employees never return to school, workplace education often represents the only opportunity for employees to develop new skills and gain new knowledge that can have an impact on their careers.

Wharton to Collaborate on First Wiki-Style Management Book

Can you have too many cooks in the kitchen? Too many co-authors on a book? Maybe not. Taking a page from Wikipedia, Wharton is collaborating on an ambitious new book publishing project that could involve thousands, if not tens of thousands of authors and editors.

Starting in November 2006, more than a million business professionals and scholars, including faculty, students, alumni, and newsletter recipients from Wharton and MIT Sloan School of Management were invited to collectively write and edit the book, tentatively titled *We Are Smarter Than Me* (**www.wearesmarter.org**).

Pearson (the publishing company behind Wharton School Publishing), MIT's Center for Collective Intelligence, and Wharton's SEI Center for Advanced Studies in Management will collaborate to produce the first community-driven "networked" book on business best practices.

The book's content will examine how Web 2.0 technologies such as social networks, wiki, and blogs can benefit the business enterprise. MIT and Wharton expect to conduct and publish primary research on

Dean Harker to Leave Wharton for University of Delaware Presidency

Wharton Dean Patrick T. Harker has announced his acceptance of the Presidency of the University of Delaware, effective July 1, 2007. Harker, who has served as Wharton's Dean since February 2000, will remain Dean through June 30, 2007.

University of Pennsylvania President Amy Gutmann has appointed a search committee to nominate a new dean, and a final appointment will be made by the University Trustees upon recommendation by President Gutmann. If the search committee has not completed its search by June 30, an interim dean will be named.

Harker's accomplishments include strengthening the School's focus on innovation, integrity, and engagement with the business community. His commitment to academic excellence and faculty scholarship attracted eminent scholars to the School's faculty — the largest at any business school. His vision of Wharton's international mission led him to redouble the School's efforts to connect with alumni around the world and to share Wharton's ideas with business leaders from Hong Kong to Mumbai to Costa Rica.

As another sign of Wharton's expanding place in the world, Harker led the creation of Wharton West, the school's San Francisco-based campus, and forged an alliance with INSEAD, the leading non-U.S. based business school. He also oversaw two innovative and very successful initiatives – expanding Knowledge@Wharton to 800,000 subscribers in 189 countries, and the launch of Wharton School Publishing.

"While the School has accomplished a great deal in the past several years, including exciting new academic programs and global outreach, I am most proud of the continued growth of the faculty, not only in terms of numbers, but in terms of their intellectual strength and diversity," Harker said.

Harker has been Dean for seven eventful years, but his Penn roots run deeper. He earned both bachelor's and master's degrees in engineering from Penn in 1981, then received a master's degree in economics and a PhD in civil engineering, also from Penn, in 1983. He has been a member of the Wharton faculty since 1984, and in 2000, was appointed as dean. He is a leading scholar in the areas of service and technology management and operations research.

whether collective projects like this can help guide the future of industry in the areas of customer service, product innovation, market research, and sales.

Contributing authors will be asked to provide real examples of companies that are trying to harness the power of communities. *We Are Smarter Than Me* will then explore why certain approaches have worked while others did not, and suggest best practices for companies to follow to make more effective use of collaboration. This "networked" book collaboration will allow all registered members of the community to edit, add, and delete content from the website. Shared Insights US, LLC, a Woburn, MA-based company that provides multi-channel community and social networking for enterprises, will facilitate the collective publishing venture using wiki technology and Web 2.0 tools.

A draft of the *We Are Smarter Than Me* manuscript, and the book authors' key findings, will be presented at Community 2.0, a conference scheduled for March 2007 in Las Vegas. In the fall of 2007, *We Are Smarter Than Me* will be published in book form by Pearson's Wharton School Publishing, even as the online community continues to create and update new content for the book on the website. All contributors will be credited.

TOMMY LEONARDI

Israeli Likud party leader and former Prime Minister Benjamin Netanyahu visited Wharton on September 5, 2006, as part of the SEI Center Distinguished Lecture Series. Said Netanyahu, "Global economy tells us we can reduce taxes now with tolerable pain or do it later with intolerable pain. If radical reform happens, spectacular growth can occur." As Finance Minister from 2003 to 2005, Netanyahu boosted the Israeli economy with pension reform, continued privatization, and cuts in both taxes and government spending.

MBA Investment Management Conference Explores New Frontiers

"For budding entrepreneurs, no one has yet solved the liability side of the equation. People want to use their money — they want it back," exclaimed Vanguard's Managing Director **F. William McNabb III**, WG'83, keynote panelist at the 2006 Wharton Investment Management Conference on October 27 held at the historic Union League of Philadelphia. "Creative solutions to this represent the new frontier in investment management."

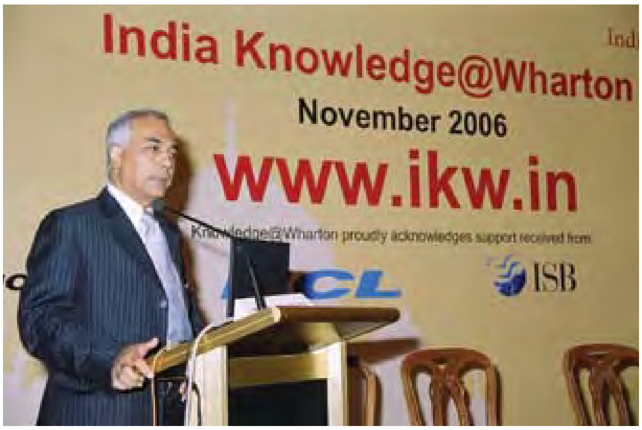
The agenda reflected those frontiers, addressing hot topics from investing in BRIC (Brazil, Russia, India, China) to activist investing to investing in energy.

To set the stage for what's next, the keynote panel, "Business of Investing," recounted the dynamic advances of the past 15 years: the naissance of mutual funds and 401Ks, the evolution of hedge funds, and the demise of defined benefit plans. Retired Vice Chairman at T. Rowe Price Group and Chairman of Penn's Board of Trustees, **James Riepe**, W'65, WG'67, noted that the focus of investment managers has remained constant: gather assets from clients, invest those assets, and serve those clients. Riepe believes that the only barrier to success for an investment manager depends on the quality of products and services the firm offers.

In the spirit of globalization, "Investing in BRIC" broadened the conference's scope to include a discussion of the latest international investments afforded to investors. The four countries featured in BRIC represent a combined 50% of the global population and 20% of GDP world. Co-founder of Firebird Management, LLC, Harvey Sawikin, mentioned that the sizes of money being moved into these countries have sparked an intellectual interest among global players. Latin America, what was once thought to have been a strictly monolithic region, is now on the brink of investment-grade opportunities, added **Stephen Trent**, C'91, Vice President of Citigroup Investment Research. While each of the panelists expressed concern over the risk associated with such investments in the short-term, they believed that careful decisions could lead to long-term profitability.

Co-chair of the conference, **Noah Mayer**, WG'07, was proud of the conference's four to one ratio of students to professionals. He didn't want the event to turn into "a networking opportunity for professionals to pitch their favorite stock." Instead, he hoped "to educate and to provide a venue for students and professionals to interact so that students might better understand the reality of a career in investment management."

TAJ MEMORIES



PROMOD HAQUE, MANAGING DIRECTOR OF NORWEST VENTURES, ADDRESSED THE FINALISTS OF THE WHARTON BUSINESS PLAN COMPETITION HELD IN CONJUNCTION WITH THE INDIA KNOWLEDGE@WHARTON LAUNCH.

Knowledge@ Wharton Launches India Version

On November 1, 2006, Knowledge@Wharton launched its fourth version about one of the world's hottest economies. India Knowledge@Wharton, which is free and published in English, will include articles that focus on India's growing importance to the global economy.

Since its inception in 1999, Knowledge@Wharton has tracked the rise of India as a global economic force through dozens of articles, case studies, special sections and exclusive interviews with business leaders. India Knowledge@Wharton, published by a staff based in Mumbai, will provide timely articles, podcasts, and research papers related to India and uniquely created for the new version.

Along with the website, Knowledge@Wharton introduced its first-ever mobile platform to meet the needs of mobile phone users, including those in India where usage outpaces PC Internet usage nearly two to one. India has 100 million mobile phone users and the numbers are growing at 5 million per month.

The launch was celebrated in Mumbai, where the festivities included the announcement of HCL Technologies as a charter sponsor. Also honored were the winners of the first-ever India version of the Wharton Business Plan Competition. The grand prize winning team was announced as ERP Construction, which proposes to offer enterprise software for the construction industry. Leading up to their presentations, Wharton Entrepreneurial Programs helped each team hone their entries by providing mentoring from seasoned entrepreneurs and business managers.

Lauder Institute Launches Joint Program With Penn Law

Wharton's Lauder Institute introduced its second joint-degree program in November 2006. The three-year JD/MA program combines a law degree from the University of Pennsylvania's Law School with Lauder's intensive language and cultural training, culminating in an International Studies master degree from Penn's School of Arts & Sciences. Lauder is best known for the intensive 22-month program that combines the Wharton MBA with a Penn MA. Eight language tracks are available: Arabic, Chinese, French, German, Japanese, Portuguese, Russian, and Spanish.

"Legal education in today's complex world requires that students graduate prepared to navigate easily across boundaries in law-related areas — and even more so in the international arena," said Michael A. Fitts, dean of the University of Pennsylvania Law School.

The program is designed for Penn Law students with solid foreign language skills who wish to improve and integrate these skills into their professional careers. The curriculum combines their legal skills with real international experience. All course work can be completed during three years of law school with

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Editorial Assistants
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Design
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Editorial Office
1030 SH/DH, 3620 Locust Walk
Philadelphia, PA 19104
215.898.7967 (phone)
215.898.1883 (fax)
magazine@wharton.upenn.edu
‹www.wharton.upenn.edu/alum_mag/index.html›

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students joining the Lauder Institute at the conclusion of their first year at Penn Law for a two-month, in-country immersion.

Undergrads Set Up Honduran Water System

HONG TRUONG

SCENES FROM HONDURAS: STUDENTS WALK THE PIPELINE TO TERRERRITOS; PENN ENGINEERING PROFESSOR TONY SAUDER LEADS A COMMUNITY MEETING ABOUT THE WATER SYSTEM; LOCAL GIRLS SPLASH IN SPRING WATER PIPED INTO THEIR VILLAGE.

Resident advisor **Priscilla Matos**, W'08, protested that she knew nothing about engineering when a freshman from her hall last year approached her this September saying she should join an excursion to help set up a new water system in a poor Honduran village. **Thomas Macrina**, W'09, E'09, though, was insistent. The group, Penn's chapter of Engineers Without Borders (PennEWB), needed her Spanish skills, and he knew Matos, whose mother came from nearby El Salvador, was looking for ways to work with the disadvantaged.

So during fall break in October, Matos, a Wharton junior, and Macrina, now a sophomore in Wharton/Penn Engineering's Jerome Fisher Program in Management and Technology (M&T), joined other students in the second phase of a project to bring more sources of fresh water to the 50-family interior village of Terrerritos.

In May, the first group of EWBers, some M&T students, went to Terrerritos and did the initial work on setting up a piping system to get water to the village from a spring about five kilometers away. They set up a spring box and collection box, did much of the pipe-laying, and began doing the technical work to get the water to the individual homes.

During the quick five-day trip in October, the next group checked the work — some of which had been done by villagers after the initial EWB excursion left — and refined the system. Matos, in addition to easing the communications between the students and the villagers, was able to use her expertise — she has a health care emphasis in her Wharton program — to try to find out whether the new water system was doing its job.

"We wanted to see if we should do a third phase, putting in flush pit latrines," said Matos. "The villagers couldn't have them before, since it is tough to have toilets if you don't have water. While we know this would improve the health of the community, you don't want to do it if the community doesn't feel passionate about the project. If the community doesn't care, then they wouldn't strive to build and maintain the latrines."

Macrina said the community input is not just important, but essential.

"The goal of Engineers Without Borders is to have projects that improve quality of life through sustainable development," he said. "The idea is that the villagers can maintain these projects themselves. We just provide the help to get them to that next level."

Matos said even the short time in Terrerritos excited her to do more, and to encourage more Wharton students to do the same.

"My two biggest passions have been health care and the Hispanic community," said Matos, who grew up in South Florida and did service projects in the Dominican Republic and Venezuela in her teens. "I'm just fortunate Thomas found me and pushed me into going."

Macrina, who is from upstate New York, said the PennEWB is growing, with about 80 members now, so he expects many more projects in the near future.

"You always hear about the poor in the third world," said Macrina. "Going to Terrerritos is putting a face to the name. You realize they're people who are not really different than we are. Unfortunately, they don't have the resources we do, and that is where we can help."

In Brief


JILL KATZ

ART DEALER LARRY GAGOSIAN SPOKE TO GUESTS FOLLOWING HIS OCTOBER 4 DISCUSSION ON THE BUSINESS OF ART.

Wharton and the Institute of Contemporary Art Collaborate on *The Business of Art*

On October 4, Wharton and Penn's Institute of Contemporary Art (ICA) launched *The Business of Art*, a series of ongoing collaborations. This series marks the synthesis of two prestigious institutions and opened with Dealers and Collectors, a discussion between ICA overseer and art collector **Glenn Fuhrman**, W'87, WG'88, and dealer Larry Gagosian, who *Art Review* magazine called "the world's greatest art businessman."

Established as part of the Penn commitment to an interdisciplinary approach to education, *The Business of Art* will enable students, faculty and the general public to take part in the conversion about business and art coming together by providing access to leaders in both fields. Other topics being considered in the coming year are *The New Philanthropy* and *The Art World and the Media*.

Levys Give $5 Million to Support Financial Aid and Social Impact Initiatives

The 125th anniversary of the first day of Wharton classes was celebrated September 18 with the announcement of a $5 million gift from **Robert M. Levy**, WG'74, and Diane v.S. Levy. The largest part of the gift, $2.75 million, will go to the existing Diane v.S. and Robert M. Levy Endowed Fellowship Fund to include support for students who are interested in careers in the nonprofit sector. A $2 million portion of the gift will establish the Diane v.S. and Robert M. Levy Social Impact Fund to encourage initiatives in areas such as social impact management and business ethics. The donation also provides $250,000 for the Penn's Museum of Archaeology and Anthropology.

Robert Levy is partner, chairman, and chief investment officer of the Chicago-based Harris Associates, L.P.

Wharton Course Auction Honored With Adobe MAX Award

The Wharton Course Auction recently won the Adobe MAX award in the Industry Innovator category. One of 16 finalists from among hundreds of entries, the application bested entries by the Fidelity Labs and Blue Cross Blue Shield of Florida, among others. The awards honor "the most innovative, groundbreaking customer projects built with Adobe solutions in the past year."

Developed by Wharton Computing, the Wharton Course Auction is a dynamic course registration system that enables MBA students to act as buyers and sellers who trade seats to win spots in the school's wide range of electives. Each student pursues an individual strategy, bidding outright on their desired courses, or buying and reselling classroom spots towards a goal of winning the most sought-after electives.

Lauder Thesis Prize Awarded for Paper on Brazil's Consumer Credit Innovation

The Lauder Institute's Reginald H. Jones Thesis Prize for 2006 was awarded to **Matthew E. Addison**, WG'06, G'06, who graduated in May. The award is one of Lauder's highest honors, going to the paper that demonstrates mastery of the Lauder learning experience: the pursuit of business knowledge with an analytical focus and attention to the nuances of cross-cultural differences. The winning thesis by Addison examines Brazil's "Consorcios," a group financing arrangement that allows clients to pool their funds to purchase durable goods, such as cars, and to minimize financing costs and inflation risk.

Entrepreneur in Residence Program Celebrates Fifth Year

The Wharton Entrepreneur in Residence program is now in its fifth year of offering all Penn students a rare chance to meet one-on-one with the founders of highly successful businesses. This year's program includes **Vernon Hill**, W'67, founder of Commerce Bank; **David Marshall**, W'61, founder of Amerimar Realty; and **Jay Snider**, W'79, founder of SpectaGuard. Entrepreneurs in residence meet with students in 30-minute sessions, during which a student can discuss ideas, opinions, and strategies for potential or actual business ventures.

Two Undergraduates Win National Community Service Awards

Two of the nine national winners of the 2006 Do Something BRICK Awards are Wharton undergraduates. The national youth leadership organization honors young people who improve their communities. **Ashley Gunn**, W'10, was recognized for starting SAIF (Students Aiding Indigent Families) — which now has over 200 student volunteers — that buys foreclosed houses, repairs and remodels them, and works with urban families to purchase the homes below market value. **Michael Page**, W'09, was honored for Talking Pages, Inc., an online system to lend audio books to the visually impaired. ◆

125 first YEARS
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Fiscal Year 2006

The Wharton Partnership is the Wharton School's program for fostering industry/academic collaboration and serves as the gateway for corporations and foundations to the School. Through these mutually beneficial interactions, Wharton Partners are the most active and consistently visible organizations at the School.

Wharton Partners are invaluable to the School's continued innovation in business knowledge and learning. As the Wharton School celebrates 125 years of business education, we are especially thankful for the support of the organizations listed below.

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Leadership Roundtable Marks Wharton's 125th Anniversary

Alumni and Professors Celebrate First Day of Wharton Classes

"In our business, if you're not innovating, you're losing," said Seth Waugh, CEO of Deutsche Bank Americas, at a roundtable discussion of business leaders and Wharton faculty, held on September 15, 2006, to mark the 125th anniversary of the first day of classes at Wharton on September 15, 1881.

The panel, led by Wharton Professor Michael Useem, discussed the key elements of business leadership in an environment of global change.

The panel offered three main pieces of advice about business leadership:

1. Innovation Is Hard Work.

"If you're waiting for a 'Eureka!,' you're never going to have an innovation," said Wharton Real Estate Professor Peter Linneman. "It's all hard work, showing up every day, moving the plans around, studying the market."

The panelists stressed the importance of innovation in a world of technological change and global competition. "You have to get out in front of consumer behavior," said **C. Robert Henrikson**, AMP'90, chairman, president, and CEO of MetLife, "because everyone else is chasing each other."

Yet they emphasized that a creative innovation, in the words of **Alex Gorsky**, WG'96, CEO of Novartis North America, is "not that 'aha' moment. It's a lot of repetition and redundancy."

2. Stay Flexible.

"You have to be open to the moment," explained real estate developer **Jeffrey Katz**, WG'71, "because the marketplace is extremely rapid. Unless you can react to it right away, you'll be reading about it next week."

Business leaders therefore have to keep their organizations flexible enough to allow creativity, even as the companies expand and grow. "When you are a large enterprise," said Novartis' Gorsky, "there are tremendous obstacles to getting ideas accelerated and moved through the organization.

"You've got to be vigilant to cut through bureaucracy so that good ideas can get through. Bigger is not necessarily better. If you have 10 scientists in a room heading down the wrong path, they're still heading down the wrong path."

3. Use Your Emotional Intelligence.

"Future leaders who are really outstanding are going to have an unusually high degree of emotional intelligence," said **Connie Duckworth**, WG'79, a former Managing Director of Goldman Sachs who now works creating economic opportunities for rural women in Afghanistan. "Businesses are driven by client relationships, and you have to be able to be sensitive to people that come from very different backgrounds, not only multicultural but also multigenerational."

"Do good, do well," echoed Gorsky. "If you keep that in the back of your mind, if you're passionate about what you do, you will be innovative. We've got a responsibility as senior leaders to make sure that we're actively ensuring that our organizations are doing things in the right way."

PHOTOS BY TOMMY LEONARDI

PHOTOS BY CHRISTOPHER WINTERFELDT

First-ever Wharton West Events Celebrates Five Years in San Francisco and 125 Years of Wharton

In 2001 The Wharton School committed its resources to an expansion of its programming through a West Coast campus located in San Francisco. That commitment has been matched by the loyal cohort of Wharton West and regional graduates who showed up in November to reconnect and celebrate the School at a reunion and Benjamin Franklin Society Event.

A Reunion to Remember

On November 4-5. 2006, Wharton West alumni from the MBA classes of 2003 through 2007 gathered at the San Francisco Museum of Modern Art. Dean Patrick Harker, Howie Kaufold, Director of the Wharton MBA Program for Executives, and **Mori Taheripour,** WG'03, welcomed the alumni, students, and guests to the celebration. Joining in the festivities were professors Ziv Katalan, John Percival, Eric Bradlow, Kenneth L. Shropshire, Chris Geczy, and school administrators.

The exceptional turnout was a major factor in the excitement and energy that prevailed throughout the evening, with 299 guests at the gala. WG'03, the first Wharton West graduating class, was represented by 51% of its graduates, while the 2005 and 2007 came in close behind, with 47% and 46% respectively. Alumni and students came from as far as Shanghai (**Alex Chan,** WG'03) and New York and all points in between. **Laura Calaway,** WG'03, said, "All I kept thinking the next day was why after only four hours, the lights came on so early and it was time to go home — there were still so many people for me to say hello to and catch up with. I'm really glad I had the chance to see so many of my classmates."

The reunion celebration continued the next morning with the family brunch at Le Meridien Hotel. Alumni and students recapped the previous evening and made plans to connect while the children were entertained with a clown, face painting, and balloon making.

Honoring Friends of the School

Two days earlier on November 3, Le Meridien was the site of another Wharton event. For the first time ever, Benjamin Franklin Society donors were honored on the West Coast. The event recognized some of the School's most loyal supporters by bringing Wharton to them.

In addition to the opportunity for guests to "talk Wharton," Dean Patrick T. Harker shared his unique vision of Wharton's direction in this 125th anniversary year. Keynote speaker Professor Ken Shropshire, the David W. Hauck Professor; Professor of Legal Studies and Business, discussed his work as the director of the Wharton Sports Business Initiative, a research and executive education focused "think tank" that works with athletes and team owners alike.

The Benjamin Franklin Society level supporters are some of the School's more loyal and generous supporters. A similar event for the East Coast will be held in 2007. For more information about becoming a member of the Benjamin Franklin Society please visit **<www.wharton.upenn.edu/development/wf_leadership.html#bfs>**.

Wharton Leader

Joseph Segel, W'51

The 'King of the Startups' redefined consumer direct marketing with the Franklin Mint and QVC.

By Marina Krakovsky

If you want a home run, you have to keep going up to bat. That's one of many lessons from the remarkable career of Joseph M. Segel, the unstoppable entrepreneur who hit two homers more than 20 years apart. When Segel retired in 1993, he was inducted into the Direct Marketing Hall of Fame; later that year, a *Forbes* magazine profile dubbed him "King of the Startups."

That's because in a career spanning over five decades, Segel founded 22 different companies in fields as diverse as publishing, minting, photography, aviation, software, hospitality, television broadcasting, and behavioral modification.

The Franklin Mint was his first big hit. Founded in 1964 to make sterling-silver commemorative medals, the company eventually branched out into other high-quality collectibles, including the award-winning "100 Greatest Books of All Time" series. With Segel at the helm, it also became the only private mint entrusted to produce the official currency for several nations, including the Philippines.

It wasn't until 1986 that Segel launched his greatest commercial success: QVC (Quality Value Convenience) Network, now a home-shopping behemoth worth about $20 billion. Having trounced more than 20 other televised shopping networks over the years, QVC has three times the annual sales of its predecessor and nearest rival, HSN (Home Shopping Network). Traditional ad-driven networks took serious notice: media mogul and Fox Broadcasting Company founder Barry Diller succeeded Segel as head of QVC, buying most of Segel's shares in the company.

Segel clearly prefers starting businesses to running them. But thanks to a habit of cultivating his successor shortly after starting a new business, many of his ventures continued to thrive long after he moved on to his next idea. The Philadelphia-based Advertising Specialty Institute, which he started as a Wharton undergrad, has been in business 50 years and is still going strong.

Not all his businesses turned a profit. Some ideas were ahead of their time (in-home smoke detectors), never found their intended market (fade-resistant photo frames), or were simply too costly to operate (read on).

Now retired for good, Segel spoke by phone with *Wharton Alumni Magazine* about some of his ideas — and what he's learned from putting them into practice.

QVC

What's kept you motivated to keep starting new businesses when you could have retired long ago?

Almost every time I retired, I said, "This is going to be the last time," but then after a little while I got the itch again to start a new business. However, now at the ripe old age of 75, I don't get that itch anymore.

What was nagging at you?

Frankly, each time it was based upon the thought that I could make money doing something specific better than others were doing it. If I had $100 million in the bank, I might have stopped earlier. I was well off after Franklin Mint, but I subsequently lost about half my net worth in the Switzerland venture, and that stimulated me to start QVC.

You're talking about Le Mirador, the five-star hotel on the Swiss Riviera.

My wife and I first owned it from 1970 to 1990, and by the time we put it up for sale it was a break-even operation. We sold it to a Japanese man who at that time was also speculating in Japanese golf courses. But the market for golf courses tanked, and he soon turned from billionaire to bankrupt. We kept going back every July as guests and saw it starting to go downhill.

In 1993, the lawyer who originally represented us was then representing the Japanese owner. We had no interest in going back into the hotel business, but this lawyer caught me off-guard one day, suggesting I make a low-ball offer to reacquire the hotel, and I made an offer that I was sure would be rejected. But it was accepted, and we ended up buying the hotel back for much less than we sold it for.

We planned to invest $10 million dollars to modernize it, but the cost grew to $20 million. At the same time, the Swiss economy was starting to go into a depression, and the exchange rate went in the wrong direction for us. Additionally, the world economy was depressed between 1993 and 1996, so business went down — but costs went up.

How did you know it was time to cut your losses?

I should have bailed out sooner. But I had a personal attachment to Le Mirador. It was a labor of love — an expensive labor of love.

On the other hand, Franklin Mint was not a labor of love. I was not a coin collector. The business sprung from a marketing concept, and it grew rapidly and profitably based upon objective business decisions.

At the Franklin Mint, you sold collectibles and limited-edition merchandise. It seems there's a trade-off: to buyers, there's scarcity appeal, but most manufacturing thrives on economies of scale. How did you deal with that?

The concept on which I based the Franklin Mint, which got somewhat eroded by later owners, was true limited editions based on date and not quantity. So even though economies of scale weren't large, we didn't have any inventory risk.

We didn't give one day of grace: if an order came in after the deadline, the order and check went back. That was a good technique because anybody whose order was returned was very careful to be early next time.

We destroyed the dies after each edition was completed, but the scarcity appeal is a minor part of it. We were very careful not to promote the concept of those products as investments because the more you promote a product that way, the more people will buy it for resale rather than to really build a collection, and that inevitably results in a supply-demand imbalance that reduces rather than increases value. Collectibles should not be sold for their investment value, but for their aesthetic and educational value.

"Making things easier for consumers is a pretty good formula."

You had lots of other marketing ideas at the Franklin Mint. And, of course, you've had plenty of ideas for new companies. Where do your ideas come from?

The main way is keeping alert to what's going on in the world—I at least scan every issue of around 40 magazines and newspapers a month. I can't identify specifically which ideas came from reading something, but I have a general recollection of periodically spotting a news article about a business concept and thinking it's something I could do differently or better.

That's how you got the idea for QVC.

Definitely — I read about HSN, the Home Shopping Network, when they went public in 1986. So I got a copy of the prospectus, and asked somebody in a city where HSN aired to send me a videotape. After viewing the tape, I felt that there were lots of ways to do it better. Since I had no previous experience in television production, I quickly started assembling a team to produce the best possible televised shopping program, and the rest is history. QVC is now the second-largest TV network in terms of revenues, which will be around $7 billion this year.

A few years ago, after the big tobacco settlement, you started a company called SmokeStoppers International. Last I heard, you were about to get Wall Street backing. What happened?

During the dot-com boom era, I could have easily gone public with SmokeStoppers.com — the underwriter was ready to do it. But we had already launched the Web site and the reaction was weak, so I pulled back. And I'm glad I did because a lot of investors would have been burned.

The idea, which was sophisticated but not easy, was to help people stop smoking through behavior modification, with daily Web-based guidance based upon the person's profile and how the person responds.

I've never been a smoker, but it's now obvious that nicotine gum or patches are a lot easier than accepting behavior modification guidance. The lesson I learned is that people tend to take the line of least resistance, and if there's an alternative to what you're selling that's an easier way to accomplish the same thing, you're not likely to do well.

But if *you're* the easier alternative, you'll do well. QVC made it easier for people to shop than going to the mall. Making things easier for consumers is a pretty good formula. ◆

DIRECT CONNECTION

How do academic ideas make it into practice? When faculty members consult with industry, the path between research and practice is direct.

BY KELLY J. ANDREWS

"Innovation is a new match between a solution and need, delivered to the customer," said Karl T. Ulrich, the CIBC Professor and professor of operations and information management. "It begins with a sensed opportunity — a hypothesis that value can be created."

The occasion was the Impact Conference on Managing Innovation Systems held on October 27, 2006. Ulrich, the conference co-director, was addressing a high-powered group of researchers and executives convened at the top of Jon M. Huntsman Hall. While Ulrich was referring to new product development cycles, his words apply equally well to the research conducted by Wharton's faculty.

Faculty research is also a match between a need — the questions raised by industry — and a solution. The professors here work with more than 1,000 businesses, government agencies, and nonprofit organizations around the world, including most of the *Fortune* 500 companies.

The answers they find become business practice around the world.

In this article, *Wharton Alumni Magazine* looks at a few examples of the real-world impact of close research collaborations between professors and corporate partners in October 2006.

TOMMY LEONARDI

KARL ULRICH

TOMMY LEONARDI

GEORGE DAY

Research Centers as Hubs for Industry Collaboration

"As a research center we are guided by the concerns of our 17 member companies," said Marketing Professor George Day, co-director of the Impact Conference and of the Mack Center for Technological Innovation, which produced it. "We created a list of priorities by consulting with them, asking what are their problems. We are currently funding 36 faculty members throughout the School, who do the research, and then communicate the results through conferences."

The Mack Center is one of 24 research centers and initiatives at Wharton. Each is a direct connection to industry through the participation of supporting members, as well as a nexus of interdisciplinary thought. Their work generates courses, academic programs, community outreach, published research, and partnerships among academics, government, and industry.

Explained Day, "Wharton is fortunate to have outstanding academic departments with vertical expertise. The research centers are the horizontal linkages that tie them together."

"We are all active consultants and teach on programs for executives, so we have a good sense of industry practices and issues," he continued. "We wouldn't succeed if we didn't deliver value to our partner companies."

Each year, each Wharton center conducts its own conferences and members meetings, about a dozen of which are designated Impact Conferences for their broader application. The 2006-2007 series kicked off with "Inclusion in the Business of Sports" in September 2006 and will continue with "International Financial Integration" in May 2007. In between, the conferences will cover topics from environmental management to household investment portfolios to urban economic development.

New Models for Innovation at Merck

The varied research that comes out of the centers highlighted in these conferences is funded by member companies and rooted in the business problems they face. Sometimes it is even produced in concert with members, as faculty consulting and research projects.

That's how Christian Terwiesch, Wharton associate professor of operations and information management (OPIM), ended up at the Impact Conference co-presenting with Brian Kelly, a 1997 alumnus of the Penn Engineering Executive Masters in Technology Management program and vice president, business integration, at Merck & Co.

The project began three years ago through a conversation between Kelly and Terwiesch's colleague and frequent co-author, Karl Ulrich. The professor asked a question about Merck's development pipeline that Kelly couldn't answer, and the collaboration began.

The relationship, which included a research grant and access to data from Merck, has yielded fascinating results, soon to be published in *Management Science*. The paper by OPIM doctoral candidate Karan Girotra, Terwiesch, and Ulrich shows that when large, publicly traded pharmaceutical firms experience a failure in Phase III drug development (the last stage before official drug approval), there is an average decline in firm value of $551.9 million. Substantial fixed costs — time, manpower, and resources — mean that a late-stage failure of a compound can be devastating to a company.

Case in point from a Merck competitor: In December 2006, when Pfizer experienced late-stage failure for its most promising heart drug, the company's valuation plummeted.

Merck faced a similar situation in the early 2000s. After experiencing wave after wave of scientific and commercial

TOMMY LEONARDI

CHRISTIAN TERWIESCH

TOMMY LEONARDI

BRIAN KELLY

success in the 1980s and 1990s, the pipeline began to dry up. Success had created overconfidence that manifested in inflated estimates of probability of success (POS).

In the boom decades, "most things we tried, worked," said Kelly. "The drugs had an impact on patients and were commercially successful, and this reinforced a bullish attitude. When we struggled in the 2000s, we realized that we were way too optimistic."

For drugs in various stages of development, general odds for reaching the market are well known: 20% for drugs in Phase I, 30% for Phase II, 60% for Phase III, and 80% for new drug applications (NDAs).

However, those general odds are aggregates. Increasing probability of success for each compound at each phase would have multiplying effect on Merck's valuation.

"If you ask most people what's the difference between a 60% and 70% chance of success, they can't tell you," explained Terwiesch. "But if you look at the expected payoff, there is actually a 50% difference between the two. It's a big implication. So increasing the accuracy of projections is critical."

Too often in business, he said, when someone says a project has an 80% probability of success, it's less of a prediction than an indication of how much they want to do the project. And unless the accuracy of predictions is tracked, it can't be improved.

Terwiesch and Kelly reported that their methodology produced a substantial increase to the accuracy of Merck's predictions.

Of course, predictions alone don't create drugs that work — they merely improve the efficiency of the pipeline.

"A key premise is that the safety and efficacy and biopharmaceutic properties of any compound are intrinsic," said Kelly. "There is nothing we can do to change those properties. The role of development is to reveal them. Success is based on revealing those properties as soon as possible to assess whether to take the compound to the next stage of testing. Appropriate POS estimates are critical to inform how much it is worth to reveal the properties."

Doing so efficiently means that sometimes potentially effective compounds are rejected.

"If I have an imperfect but sufficiently predictive test after Phase One, we're going to use it," said Kelly. "If you want to improve POS, you must be willing to throw out some compounds that are good with an imperfect test if that means that the drugs that make it through have a higher chance of succeeding. It will drop your cost structure."

While choosing between leads can be a thorny problem in product development, that's less of a concern for Merck. In pharmaceuticals, a queue is beneficial.

At earliest stage, 5,000 to 10,000 compounds are evaluated against a "target" — the clinical indication. In the last stage, Product Development, one to three compounds are evaluated and zero to two compounds emerge as NDAs. "Some years the successful products are zero, and all the money developed to research and development goes to nothing. We can make good decisions, and have bad outcomes."

Effective R&D strategy can make a big difference. When pharmaceutical companies have developed a backup — a redundant compound that could potentially serve the same indication — they can decrease the impact of a late-stage failure. But whether that's the right call or not depends on the POS for each of the drugs.

"If I can only launch three things and five things are competing and several are redundant, how do I choose?" said Kelly. "Do I launch three of the same or diversify? If you can't estimate dependent POS, you have no ability to make decisions."

"One of the lessons here," said Terwiesch, "is that you can't value a drug in a vacuum." The value depends in large part upon the company's strategy and portfolio. "Net present value won't do it," he continued. Instead, you need to look at how the drug fits into the overall pipeline. He and his colleagues are working on models that will value the whole pipeline, taking into consideration the balance of risks involved as well as the utilization of knowledge resources.

The outcomes of the Merck/Wharton collaboration are already finding a wider audience. The research will be included in Ulrich and Terwiesch's upcoming book, *Managing*

"Being able to ask the right questions is not obvious or easy."

TOMMY LEONARDI

IAN MACMILLAN AND **JOHN RANIERI, AMP'96**

Innovation Systems. And earlier in 2006 Wharton launched a week-long Strategic R&D Management program for executives under academic director Terwiesch, who developed the curriculum in collaboration with Ulrich and INSEAD colleagues. The course has already been offered through Executive Education at Wharton, INSEAD, and Merck itself.

Putting Theory to Work at DuPont

Executive Education is not only a product of industry collaboration — it can also be the originator. The next pair of co-presenters at the Impact Conference on innovation actually began their relationship in an ExecEd classroom.

Ian C. MacMillan, director of Wharton's Sol C. Snider Entrepreneurial Center and The Dhirubhai Ambani Professor of Innovation and Entrepreneurship, has worked with **John Ranieri**, now vice president and general manager of DuPont Bio-Based Materials since 1996. The two met when Ranieri was a visiting fellow as part of Wharton's Advanced Management Program, the intensive five-week Executive Education program offered to highly qualified senior managers.

Ranieri has utilized and developed entrepreneurial management structures that more effectively develop and lead transformative growth opportunities in an environment where information, speed, and adaptability are of critical importance. As an example, a real options framework developed by Ian MacMillan was applied to more effectively assess and maximize a portfolio's valuation. The idea is that a small upfront commitment for the initial stages of new product development is a "real option," similar to a financial option. Investors have a choice to make larger investments in later stages if the technology successfully passes early tests. The system was further elaborated for greater adaptability, to maximize capital leverage, and to develop partnerships that are accretive in value.

Ranieri further allocated his investments in an "opportunity portfolio" — a concept introduced by MacMillan and Columbia's **Rita Gunther McGrath**, GrW'93, in their book, *The Entrepreneurial Mindset*. Picture a matrix with two axes: technological uncertainty and market uncertainty. Projects with low uncertainty in both dimensions are Enhancements — new products that generate incremental revenue by improving or finding new applications for existing products. Those that have high uncertainty in both dimensions are Stepping Stones — high risk but with the potential to transform both technology and the marketplace.

Organizing investments in this manner and using options-based management and financial systems assures that both winners are identified in a timely fashion, while projects that are not market-valid or technologically feasible are stopped before they become too costly.

MacMillan and McGrath advocate establishing a strategy, structuring an opportunity portfolio that supports it, then employing adaptive execution (i.e., learning along the way through the use of real options).

In 2002 Ranieri, who holds a PhD in medical sciences, joined the unit of DuPont charged with creating greener energy sources and materials using biology, chemistry, materials science, and engineering. Two years earlier, DuPont Chairman & CEO Chad Holliday had set a target for DuPont to derive 25 percent of its revenue from non-depletable resources by 2010 — a lofty goal.

Ranieri mapped DuPont's projects into opportunity matrices, and the product development cycle for Bio-Based products was aligned to create a portfolio with allocations in each sector of the opportunity matrix. By understanding the overall mix, the business created new product targets that were both high value-in-use and reduced the associated environmental impact.

Instead of evaluating projects across the board, each was evaluated within its sector. Instead of embarking on massive but risky projects, DuPont used relatively small investments to gain knowledge, reduce uncertainty, and target capital investments intelligently.

Five years later, DuPont Bio-Based Materials is reaping the benefits with a dozen Bio-Based Materials business opportunities ready for commercialization in the next five to seven years.

"Real options framework changes the dynamics of the team and the questions asked," said Ranieri. "For example, here's a question that was not obvious several years ago in the biofuels market: 'Is there something else we could make that is superior and could be transformative? How can we have

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WILLIAM NESSMITH, OLIVIA MITCHELL, GARY MOTTOLA, TAKESHI YAMAGUCHI, AND STEPHEN UTKUS, WG'84

"Research collaborations with industry depend on an individual who wants to get involved and who champions the project."

both value-added products and reduce the environmental footprint at the same time?' It turned out that these qualities weren't mutually exclusive. We opened up new large-market opportunities with the technology base, and as we learned, we found surprises along the way that weren't factored in the original valuations. We won both ways, feeding success and stopping failure simultaneously."

As an example, the answers to those questions resulted in significant new product opportunities — an integrated process that produces cellulosic ethanol from parts of the corn that were formerly waste products and partnered with Broin, and a further partnership with BP to develop biobutanol, which has advantaged performance as a fuel compared to ethanol.

"Being able to ask the right questions at the front-end of innovation is not obvious nor easy," he said. "But when you can more effectively learn and adapt, that's how you get the right answers that create significant value and transform markets."

How a Vanguard Partnership Creates a Unique Knowledge

In October 2006, the Pension Research Council (PRC) published a new working paper on trading behavior in pension plans. Just another academic research paper? Not in this case — for it arose out of a unique multi-year partnership forged between the Wharton Pension Research Council and Vanguard Group, an investment management company and one of the Center's Senior Partners.

This partnership gave PRC Director Olivia Mitchell, International Foundation of Employee Benefit Plans Professor and professor of insurance and risk management, and Takeshi Yamaguchi, a doctoral student in insurance and risk management, an opportunity to conduct real-world empirical research on the behavior of 401(k) plan participants. It also gave them two co-authors — Gary R. Mottola, a researcher at the Vanguard Center for Retirement Research with a PhD in social psychology, and **Stephen P. Utkus**, WG'84, the founding director and principal of the Vanguard Center whose deep interest in investor decision-making began during his years at Wharton.

While Vanguard was a long-time member of PRC's 24-company advisory board, a ground-breaking research collaboration grew out of an Impact Conference on behavioral finance, which both Mitchell and Utkus co-organized in 2003.

"Our conference looked at the psychological and sociological, as well as economic determinants on behavior," said Mitchell. "Yet coming out of the conference, we recognize that little in behavioral finance focused on real-world investment decision-making in retirement plans. There was information from other fields — not pensions — that people traded too much and were unduly influenced by what their coworkers told them around the water cooler — not the determinants that financial planners would even consider in the decision-making process. We wanted to see how these apply to pensions."

Vanguard was the perfect partner. "Research collaborations with industry depend on an individual who wants to get involved and who champions the project," Mitchell explained. "Steve was unique in understanding how academic research applied to his company."

The Vanguard Center for Retirement Research was created in 2001 and has been led by Utkus since its inception. It was established as part of the Institutional Investor Group at Vanguard overseen by managing director **Bill McNabb**, WG'83.

"In the early days of formulating our research agenda, Bill and I were talking about the question of 401(k) trading," stated Utkus. "We knew that only a few participants traded, but some did so actively, and we were wondering whether they were actually making money or possibly undermining themselves and their retirement security by trading excessively. Over time I attended several of Olivia's PRC conferences and also became involved with the PRC advisory board."

When the 2003 behavioral finance conference revealed a gap in the research, the researchers of Vanguard and PRC decided to pool research efforts to look at 401(k) trading.

Academic Research with Practical Application

A series of working papers have resulted from the collaboration — with more to come. For example, the first paper, for which Mitchell served as lead author, formed a profile of 401(k) participants and their trading behavior: "We find that

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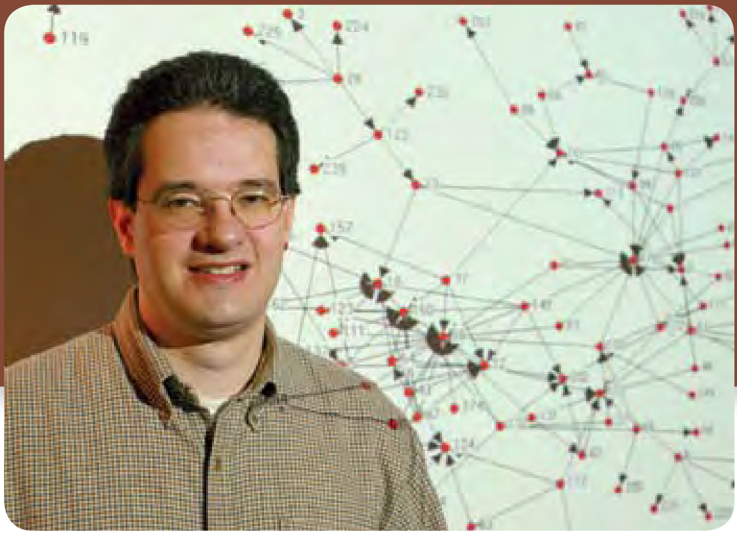

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most 401(k) plan participants are characterized by profound inertia. Almost all participants (80%) initiate no trades, and an additional 11% makes only a single trade, in a two-year period." They found that the most active traders are affluent, older, with higher incomes, and longer job tenure who use the Internet for trades, hold a larger number of investment options, and are more likely to hold active equity funds rather than index or lifecycle funds.

Most recently, the October 2006 paper elaborated with a surprising result, finding that the risk-adjusted returns of traders are no different than those of nontraders. Even more intriguing, the researchers found contradictory effects from trading. As they concluded: "Certain types of trading such as periodic rebalancing are beneficial, while high-turnover trading is costly. Interestingly, those who hold only balanced or lifecycle funds, whom we call passive rebalancers, earn the highest risk-adjusted returns."

The research collaboration between the Pension Research Council and Vanguard is multi-faceted. A related study with Mitchell, Utkus, and Wharton doctoral student Tongxuan (Stella) Yang, looked at 401(k) plan design. It resulted in a 2005 paper published in *Restructuring Retirement Risks* by Oxford University Press. The team was trying to measure the effectiveness of employer matching in encouraging employees to contribute to defined contribution plans.

Explained Mitchell. "We were interested in the question of whether and how companies can help employees save for retirement. Employers often provide matches in the 401(k) setting but lack a clear idea of what impact the matches might have. For instance, when there's a larger match."

She continued, "Do more people join the plan, and do they contribute more?

To examine this question, they needed firm-specific data. The reason is that tax law constrains how much workers can contribute to their pensions, with complicated rules that are linked to what other employees in their company do. For instance, when low-paid employees don't join the plan, or don't save much, that limits how much other employees can save. So we wanted to know what everyone in the plan was doing, to understand how these interactive constraints work and how companies can encourage retirement saving more effectively. Working with Vanguard helped us get a much better picture of what real-world employees and employers do."

The results were surprising — and a little depressing. The authors concluded that company matches do induce people to contribute but the effects are small. In the typical 401(k) plan, only 10% of non-highly-compensated workers are induced to save more by match incentives. The authors suggest that automatic employer contributions, regardless of employee participation, can be a more cost-effective and influential means of boosting retirement preparedness.

"This is just the tip of the iceberg — we have more papers coming out," Mitchell said.

Two and a half years into the project, Utkus said they'll keep going as long as they have questions. He explained that creating new knowledge is part of Vanguard's culture. The mission is to help plan sponsors and individual investors make better decisions, and the results are widely applicable. After all, who doesn't want to retire in comfort?

"When we do a formal working paper with Olivia or Takeshi, a lot of the math or statistics will be lost on our clients because they don't have PhDs," Utkus said. "They don't need to. But the introduction, the conclusions, the topline results will be very practical. We're doing high-quality, independent academic research, but on the other hand it has results people can relate to."

Describing her own criteria for getting involved in any project, Mitchell insisted, "I'm a researcher first and foremost, so my condition for getting involved in any project is that it be publishable. We take pains to make sure that we retain publication rights. We work with whoever we're working to make sure we have the right interpretation and caught the nuances that matter."

BRISTOL-MYERS SQUIBB LOOKS AT NEW PRODUCT DIFFUSION

Often the process through which arcane research questions result in accepted business practice is more convoluted than the partner research at Merck, DuPont, and Vanguard. First a concept is picked up by an innovative, influential individual who takes a graduate class, attends a conference, or reads an academic journal.

The individual puts the idea into action, and successful results create believers. Management teams seek to replicate the results across departments — and some team members even take the idea to new employers. As the influence spreads, winning concepts are identified by market research

ED ECKSTEIN

Z. JOHN ZHANG

firms, which disseminate the idea from client to client, and by the business press, which writes about the trends. The final stage of acceptance is when the idea becomes a standard business practice, a metric demanded by directors or a function embedded in commercial software.

That's what happened with Christophe Van den Bulte, an associate professor of marketing who has extensively researched social networks and the power of influencers.

He experienced that power himself recently. One afternoon he was contacted by a director at McKinsey, who wanted to discuss an unpublished working paper Van den Bulte had posted on his faculty web page. Two weeks later he had an email from Boston Consulting Group, and not long after that, from Arthur D. Little. The link to the unpublished paper had been found by influencers at each company.

"It's a trickledown process," he said. "Influential people with technical knowledge like to think at high level of abstraction, so they read academic journals and paper. Then they interpret what they find and pass on the conclusion to their peers and staffs."

It's not a coincidence that Van den Bulte both researches social networks and benefits from them.

Marketers at pharmaceutical company Bristol-Myers Squibb knew that opinion leaders can make or break the commercial success of a new drug. What they wanted to know was how to identify those leaders to deploy their representatives effectively rather than blanketing the entire medical community, and they hired pharmceutical marketing specialists Rivermark to help.

The citations in Malcolm Gladwell's bestseller *The Tipping Point* led to Everett Rogers' scholarly classic, *Diffusions of Innovations*. Those references led to University of Southern California public health professor Thomas Valente, who said he understood physician networks but not marketing. He pointed Rivermark to Van den Bulte.

Working with Rivermark and Valente, Van den Bulte began a small-scale analysis of physician networks in San Francisco. Using survey data from doctors nominating their most trusted contacts, he mapped connections between physicians.

Some of the physicians appeared to be the hub of wheels with many spokes — they were connected to other doctors who trusted them. Some physicians were isolated, and others were cross-connectors — individuals who linked up two networks that otherwise seemed to be almost separate.

Some of the hubs were unsurprising — they were renowned leaders at highly reputed university medical centers, and Bristol-Myers Squibb had long established relationships with them.

But several highly connected physicians in one of the networks were not even on the radar for Bristol-Myers Squibb. And the researchers were surprised to discover how the two parallel networks were divided: by ethnicity. In one network, the physicians had Western surnames, and in the other, Asian ones. While ethnic enclaves are quite obvious in social life, the way that those social norms transfer to professional life was only obvious in retrospect.

In the next step Van den Bulte and his fellow researchers, including Wharton marketing colleague Raghuram Iyengar, are analyzing two separate sets of data. One, they are combining the network data with databases containing information on sales calls by pharma reps, on physicians' prescription volume for the previous generation drug in this treatment category, and on the timing when each doctor wrote his or her first prescription for the new Bristol-Myers Squibb drug.

Two, they are overlaying demographic and professional information — where the doctors attended medical school, how long have they been in practice, whether they have a publication record — to find personal characteristics that may be used in other markets to predict the structure of the social network, including who the influential physicians are.

With the first phase completed in October 2006, the study is being extended to more cities in the U.S. and China to see whether the results hold up.

HOW RESEARCH BECOMES PRACTICE

So again, how does the topic of Van den Bulte's research — new product diffusion and social networks — relate to the spread of academic discoveries to business practices? Van den Bulte supplies a few examples from his own experience, recalling how Tom Valente, who recommended him for the Bristol-Myers Squibb job, knew him.

While still a doctoral student, Van den Bulte read a half-century-old sociology study on the diffusion of a new drug. He thought it would be interesting to re-analyze the data using modern techniques. A professor with whom Van den Bulte was taking a class at the time had just come back from a conference where, he happened to remember, someone had made a presentation using those very same old data. Van den Bulte checked the conference program and found his name: Thomas Valente. Voilá — a cross connection.

Getting Involved with Wharton Research

The Wharton Partnership is the Wharton School's program for fostering industry/academic collaboration. The Partnership engages with more than 200 corporations and foundations.

The Partnership provides member organizations with a single entry point to the School. A relationship manager assists Partners in identifying and connecting with faculty who are researching topics of specific interest to them. Companies collaborating with research centers have early access to findings.

For more information, visit <partnership.wharton.upenn.edu>, call 215.898.5070, or e-mail corporate-fdn@wharton.upenn.edu.

In another example of how networks lead to the spread of academic research, Van den Bulte presented his ideas at the annual business-to-business marketing conference run by his former faculty adviser at Penn State's Institute for the Study of Business Markets. In attendance was Dominique Hanssens, executive director of the Marketing Science Institute, a Cambridge, MA industry-sponsored nonprofit organization that supports academic research to develop and disseminate marketing knowledge. Hanssens drafted Van den Bulte to write the book on social network marketing for its Relevant Knowledge line, a series of accessible books that interpret academic theory for business practitioners.

The book's publication will continue the dissemination process that is already in motion. In September 2006, Knowledge@Wharton published an article about his work, allowing Van den Bulte's research to reach the biweekly journal's worldwide mass audience of 500,000 subscribers across English, Spanish, Chinese, Indian, and Portuguese editions.

Having his ideas reach both academic and professional audiences is important to him. Echoing Mitchell, Van den Bulte said, "If I can't publish my results, I'm not interested in consulting. A condition for my working on this that we could use it for research purposes."

Fortunately, the firm found that reasonable. The manager in charge of the new product's launch told Van den Bulte he wasn't worried about exposing the results to competitors because academic research takes so long. "By the time the paper is out, either we will already be successful with the product, and we won't care," the product manager joked. "Or, the product will have failed, in which case we *really* won't care."

Why All Research Matters

In another situation, Z. John Zhang, associate professor of marketing, consults with ExxonMobil on their retail pricing strategy. His work is one factor in Exxon's outstanding recent performance, including the second-largest quarterly profit ever for a publicly traded company — $10.49 billion from July to September 2006 announced on October 26.

"We have a different culture here at Wharton," he said. "We not only have a passion for research, but we at Wharton have a passion for making an impact on practice. Practice infuses our research in terms of what questions you ask and what directions you go in. A lot of companies look to Wharton for new ideas and ways of looking at things, and that includes consulting."

For Zhang, consulting with ExxonMobil is another way to have a direct impact and see his ideas at work.

"The exchange of information isn't unidirectional," he explained, "Most of the benefit of working with them is seeing how complex the real world operations are, and how much knowledge we still need to see clearly. In essence, it does inspire a lot of new research questions that are not necessarily closely related to retail gasoline market.

He continued, "As researchers, we're not really terribly interested in a particular company doing a particular job — we are looking for things that are true across industry. If you look at individual customers, each one behaves in an odd way. But if you look at an aggregate level, you see what matters to the firm. There are regularities there."

While the generation of knowledge is itself part of Wharton's mission in itself, it's also inseparable from the main pillar: education.

"When you do research, it's like training to be a soldier. When you do push-ups, will that train you to fight a war? Probably not, but you build up your muscles, strength and endurance, and that will help you survive," he said. "Whenever you do research, it helps you see through complexity in other settings to come up with better solutions. Research is always relevant to practice no matter how abstract it is. People often complain that their professors' research has no relevance to what they know about business. They've missed the point. You need the drills in impossible thinking to push knowledge forward. Research helps you think clearly."

He thinks that Wharton's MBA and undergraduate students benefit directly. After all, the applications, metrics, and formulas that are used in business every day aren't magic — they are the results of complex research ideas making it into practice. And those formulas provide only data points, not wisdom.

"Our students get it," he continues. "If you want to be a leader, you need a grasp of the big picture and to have ideas. You have to be able to see things differently than other people. There's not a formula to follow — you have to know how to think." ◆

A Bright Future for Energy Ventures

Wharton alumni are lowering carbon emissions, reducing consumption of fossil fuels — and pursuing profits.

BY MARTHA MENDOZA

Any problem can be approached from multiple directions. When that problem is as complex as world dependence on a diminishing supply of fossil fuels and resulting environmental changes, multiple approaches are not only possible — they are necessary.

Some of Wharton's alumni are stepping up with solutions to this pressing issue. They're developing alternative resources, funding new technologies, and promoting conservation with the aim of reducing dependence on electricity and petroleum.

Clean, high tech industries are emerging as one of this century's strongest economic drivers. More than $7.3 billion of venture capital was invested in North American "clean tech" companies between 1999 and 2005, including more than 1,085 investment rounds in 628 U.S. and Canadian companies, according to Cleantech Venture Network LLC, which tracks investment dollars in commercially viable alternative fuels and energy. And across the Atlantic, London's Alternative Investment Market (AIM) has become a prime listing candidate for clean technology because it offers looser regulation than the U.S. market, especially in the wake of Sarbanes-Oxley.

Tucker Twitmyer, C'90, WG'96, managing partner with Philadelphia-based EnerTech, says his firm is already reaping benefits from its investments in clean energy.

"When you have a trillion-dollar-a-year market in the U.S. that seems to grow at an inexorable 2 percent to 3 percent a year, it just begs for innovation," Twitmyer told *Wired Magazine*. Twitmyer was among a group of venture capitalists who participated in a panel discussion about clean technology at the Wharton Private Equity Conference held in January 2006.

And the approaches used by alumni are diverse, ranging from the first high performance electric-powered sports car to fuel cell development. Individually, they are venture capitalists, managers, technologists, and entrepreneurs, all moving forward on their unique ventures; taken together they are dynamic pieces of a complicated solution.

A Challenge in the Classroom

For **Tom Arnold**, WG'05, the connection from his Wharton education to his career in alternative energy couldn't have been more direct.

Arnold was one of 40 students who were challenged by Professor Karl Ulrich in his "Problem Solving, Design, and System Improvement" course in Fall 2004 to launch a viable business that would create a way for everyday drivers to compensate for the environmental damage they cause every time they turn on their ignition. Their deadline? Six weeks. Their budget? $5,000.

Within the timeframe, the students developed a business called TerraPass.

Here's how it works: Consumers go to the TerraPass website (**www.terrapass.com**) and use a calculator there to measure how much CO_2 their vehicles dump into the environment each year. The calculator accounts for vehicle make, model and year, as well as how much it is driven. Airline trips, can also be calculated.

Once a consumer has measured their "carbon footprint," they can buy a TerraPass, which is used to fund the same amount of renewable energy projects as they are currently responsible for polluting. TerraPass is leveraging one renewable natural resource — consumer guilt — to finance others.

The projects result in verified reductions in greenhouse gas pollution. And these reductions counterbalance your own emissions, explains Arnold. An average driver emits 10,000 pounds in carbon dioxide in an average year. A TerraPass to offset those emissions costs between $39.95 and $49.95 per year.

In its first year, TerraPass grew to four full-time employees and raised $500,000 in startup capital. The company has signed up 16,500 members and taken the equivalent of almost 6,000 cars off the road by funding nine clean energy projects.

It's a great start, said Arnold, but he has some big goals: "I want to see a million members."

The Greening of Detroit

Ann **Manning**, WG'87, manager of Sustainable Business Strategies at Ford Motor Company, worked with Arnold and TerraPass to create a unique partnership dubbed Greener Miles. This program allows Ford owners to go online (**www.terrapass.com/ford**) and estimate their annual emissions from driving, and then offset them by purchasing a TerraPass that in turn will fund emission-reducing projects.

Manning has also set up similar offset programs for some of their factories.

She said she keeps her focus simple: Hybrid cars. Alternative fuels. Efficient engines. They're all crucial steps in addressing climate change and global warming. Manning said there's another important step as well: better driving.

"Think about it," she said. "Can you make a bigger impact with a few thousand hybrid vehicles, or with a 1 mpg gain on millions of vehicles sold each year around the world?"

This is exactly what Manning is thinking about. Her position at Ford is to innovate, market, create, and promote new strategies and initiatives that will keep the company driving toward the future.

Nearly seven years ago, Ford launched an initiative to address issues of climate change and human rights, recognizing these items are an important piece of their business

ANN MANNING, WG'87

ANDREW SAX

Ford's vehicles are already 99 percent more efficient than they were in the 1970s, said Manning, so the potential for squeezing even more miles per gallon for every vehicle is not nearly as great as it used to be.

Ford's focus now is on carbon emissions, she said, targeting climate change and global warming at the tailpipe.

"You hear a lot about exciting new fuels that can do a lot about greenhouse gases," she said.

Ford currently offers three hybrid vehicles in its lineup with two more on the drawing board, and offers four "Flexible Fuel" vehicles that can run on E85 ethanol. In addition, Ford's manufacturing plants are pushing to be more green.

Manning's job also includes convincing Ford's customers and existing owners that the potential to reduce emissions is a lot greater than just the new technologies.

"We want our customers to think, 'How can I be part of the solution?'" said Manning. "We figure, let's work on all the new technologies coming around the bend, explore the potential not only for climate impact and market reception, but at the same time, right now, let's focus on helping drivers understand what they can do. One thing is Eco-Driving."

Here's what Eco-Driving is: gentle accelerating, staying at the speed limit, constant speeds, smooth decelerations and turning off a vehicle rather than letting it idle for long periods of time.

And Manning has an even simpler solution: drive less.

"It's all about creative thinking," she said. "We learned at Wharton to take different approaches to the same problem. At Ford, our focus isn't just on what different things we can do to our vehicles, although no doubt about it our biggest focus is on that. But there are other ways, and I'm able to look at those as well."

High Performance, Cleaner Technology

While hybrid cars like those from Ford — powered with electricity and petroleum — are working their way onto U.S. freeways, **Elon Musk**, W'97, hopes to take low-emission cars to a whole new level with Tesla, a high-performance, highly efficient electric sports car that doesn't burn any oil at all.

"I guess electric cars always seemed to me to be the obvious mode of transportation for the future," said Musk. "Fifty years from now people will look upon gasoline-powered cars the way we look at steam-powered vehicles today: outdated and outmoded."

Tesla is one of several eco-business ventures Musk is involved in, and he is extremely optimistic about the entire genre.

Take this comment: "The solar industry is going to be gigantic, way bigger than the Internet," he said.

Coming from Musk you'd be foolish to do anything but take this prediction seriously. Musk has launched and sold a series of successful businesses including PayPal, which was acquired by eBay for $1.5 billion in stock in 2002. So what's he doing now?

Musk spends most of his time and energy working at SpaceX, a company developing and launching the world's most advanced rockets for satellite and later human transportation. But he is also chairman and the lead investor in two cutting-edge alternative energy companies: Tesla Motors and Solar City, which aims to "bring solar power to everyone."

Tesla Motor's first production model is slated to roll out in December 2007, and Musk plans to own and drive the very first one. The first model, the Tesla Roadster sports car, is capable of going from zero to 60 mph in around four seconds, has a top speed of better than 130 mph, and can travel up to 250 miles on a single charge, which at today's energy prices would cost about $3. It beats a tank of gas. The car's power comes from its Lithium-ion Energy Storage System, or battery pack, which can be recharged in about 3.5 hours.

Musk's second clean energy venture, Solar City, has the bold yet simple goal of becoming "the Dell computer of the solar space," said Musk. "You have a lot of companies working on the photovoltaic cell itself, but not a lot of people are working on delivering the solar power solution to the customers."

To achieve this, Solar City conducts assessments of homes or businesses that are considering going solar. The company will then install power systems that produce electricity during the day. Any excess electricity is sold back to the utility grid at retail process. Solar City is also acquiring existing small solar energy suppliers around the U.S. which are already providing power to some businesses and homes.

Musk said there's a public misconception that converting to solar energy takes 20 or 30 years to pay off.

"People don't yet realize that the return you get by installing solar panels on your roof today goes from a low of 10 percent annual return to a high of a 15 percent annual return. It's actually already a very smart economical decision for a large number of households today," he said. "I don't know too many places where you can guarantee that kind of pay off."

Musk said his company is not lobbying for government subsidies like those that existed in the 1970s and early 1980s.

"We think we have to make solar cost efficient enough that government subsidies are not necessary," he said.

> "Fifty years from now people will look upon gasoline-powered cars the way we look at steam-powered vehicles today: outdated and outmoded."

Bringing the price of solar down involves a lot of "fairly mundane" work, said Musk — process improvement, technology installations, monitoring panels, better assembly systems, better combinations of technology.

And although the largest solar energy users are outside the United States, Musk said Solar City's focus so far is entirely domestic.

"The U.S. market is the biggest in the world, and I think that if the U.S. uses 25 percent of the world's energy, that's a big market," he said.

A Solar Future

While Musk is launching new solar businesses, **Bill Rever**, WG'82, is working with one of the stalwarts in the industry as strategic marketing manager for BP Solar.

Rever first became interested in solar energy as a graduate student at Penn State, where he earned a dual degree — a master's degree in engineering along with his Wharton MBA. It was an engineering course in solar energy, combined with the stimulating business classes, that led to his life's calling.

ELON MUSK, W'97

Upon graduation, Rever said he "knocked on doors" of the top solar energy businesses, and was offered a position with a small but up-and-coming solar energy firm, Solarex. During the next 20 years, Rever came along as Solarex was purchased by Amoco, and again when Amoco was acquired by BP, one of the world's leading energy companies.

BP Solar designs, builds, and installs solar electric systems for residential and industrial customers. The company has installed systems in more than 160 countries and has manufacturing centers in Australia, India, Spain, and the U.S.

The solar industry, these days, is almost entirely focused on solar photovoltaics, although there is still a small market for solar thermal products in India and other places. In the 1970s and early 1980s, the solar energy market in the United States was driven a lot by government demonstration projects funded by the Department of Energy. Photovoltaics were entering markets where it was economically justified, typically remote areas without conventional and inexpensive utilities. The market here flattened in the late 1980s, but started growing again in the early 1990s. Climate change and global warming, as well as reduction in access to petroleum, have brought new attention — and funding — to solar, said Rever.

Rever's work has always been demanding, and these days travel is a constant, he said. In the 1980s, most of BP Solar's markets were in less developed countries. Now the markets are mainly in the avant-garde of new energy and environmentally driven markets like Germany and Japan.

In the last year, with a leading role in the development of a global marketing strategy for BP Solar, Rever has visited Japan, Australia, China, Germany, and Thailand, working with officials to develop new markets. He said he hopes sometime to shift that focus domestically. The United States accounts for just 7 percent of the global market for photovoltaics, even though it consumes 25 to 30 percent of the world's energy.

Rever said solar power is such a fringe player in the United States that many people assume that because he's at BP, he's in the petroleum business.

"If you're a stock market analyst, you're looking at BP as an oil and gas firm," said Rever. "But we've been in the solar industry for 30 years."

Greener Buildings, Greener Earth

Home solar systems are still too costly for widespread adoption, but Rever looks forward to that changing. There's been a long history of cost reductions, he said, on average about 5 percent per year. Rever said the key factor keeping solar from becoming a financially viable alternative for homeowners are the historically low prices for other forms of energy. As electricity and gas prices rise, however, he said solar is becoming a more reasonable alternative, both economically and environmentally.

While Rever is working to capture and convert sunshine into power, **Bob Aresty**, W'63, is hoping to reflect and absorb those same rays.

Aresty is president and CEO of The Solar Energy Corporation (Solec), the world's largest manufacturer of specialized, heat reflecting and absorbing coatings for solar, building, roofing, and manufacturing. The technology behind these coatings was developed in 1974 in a laboratory on a farm in Princeton, NJ, and today Aresty produces two types of coatings that insulate and control heat and light absorption and radiation. The factory itself, heated 100 percent by solar, has a glass front to make best use of passive solar heat.

The technology may look like just another layer of paint, but the chemistry of that coating can produce energy savings immediately. It sounds entirely too simple — you paint on the products and your bills go down. Solec's coatings can lessen air conditioning costs by 10 percent to 15 percent.

These days, as global warming make it more crucial than ever to reduce dependence on electricity, Aresty said the potential of his products is "really quite mindboggling."

"I think of what we do in our little niche, we could do between \$50 and \$100 million a year, and we don't do anything like that," he said.

That could change. Aresty's products are part of the green buildings movement, the larger trend to develop high-performance buildings that meet five areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The movement was marginal when Aresty began, but it is now mainstream. The U.S. Green Building Council (USGBC), has a membership of more than 6,900 organizations. McGraw-Hill Construction estimates that more than \$59 billion will be spent annually on green building by 2010, up from \$10.2 billion in 2004.

The imperative for greener building technology is worldwide. In November 2006, the Wharton Infosys Business Transformation Awards honored environmental entrepreneur Enrique Gomez Junco B. for leading Mexico toward greener construction. When Celsol, the company he founded to provide solar energy to hotels in Mexico, faltered due to lack of financing, Gomez Junco re-launched his business in 2000. Under the name Optima Energía the company has been building energy and water efficient buildings through performance contracting, saving its clients, 84 million kilowatts of electricity, 11.9 million liters of natural gas, 2 million cubic meters of water, 14 million liters of diesel, for a total of \$1,000,000 (USD) a month.

Short and Long Term Solutions

Like greener buildings, biodiesel is a technology that is available now — it's already a fuel additive for gasoline, and almost any engine that uses diesel can be converted to biodiesel.

In 2005, **Tian Long**, WG'00, saw the potential, and left investment banking to found one of Asia's first biodiesel businesses: Vance Biodiesel. With corporate headquarters in Singapore and its production based in Malaysia, Long's company is using local palm oil to produce a high-quality biodiesel that is helping supply Asia's growing power needs while reducing carbon emissions.

Because the outlays of capital for biodiesel production facilities are massive, established companies are leading the way in the U.S. For example, DuPont is currently partnering with BP to commercialize biobutanol, an alternative to ethanol developed under the leadership of **John Ranieri**, AMP'02. While biobutanol is a superior product, producing it economically is the challenge.

"If you come in with an offering that is more expensive than petroleum and say, hey it's green, consumers aren't ready to pay for it," said Ranieri at a Wharton Impact Conference in October 2006. "You have to find the places you go first — the projects to do first. We have to find both quality and sustainability." As a consequence, DuPont is introducing a range of sustainable products — some, like seed corn that produces a higher output of ethanol, are available now, while others, like biobutanol, have longer-range commercialization cycles. (For more on how Ranieri manages innovative projects for DuPont, see p. 16)

In the Philippines, **Vincent S. Perez**, WG'83, similarly took a multi-pronged approach while serving four years as Energy Secretary until 2005, moving his country toward conservation and oil exploration, while pursuing greater reliance on clean, indigenous and sustainable energy sources including biodiesel and geothermal power. Solving the energy crisis requires immediate changes and long-term transformation.

Scott Schecter, WG'86, CFO of HydroGen Corp., is taking the long-term view to clean energy: the fuel cell. While

BOB ARESTY, W'63

commercialization is still in the future, success could be earth-changing.

Here's how fuel cells work: a simple chemical reaction turns hydrogen and oxygen into water and electricity. Unlike a normal generator that emits pollutants, the only byproduct of a fuel cell is the pure water vapor. And unlike a battery, a fuel cell will continuously produce electricity as long as hydrogen and oxygen are supplied to it.

Schecter's firm focuses on a type of fuel cell that uses liquid phosphoric acid as the electrolyte to conduct the electricity.

His challenges include expensive materials and limits to efficiency. His goal is cheap, reliable power.

"When we prove that we can do what we think we can do, this can truly be a game changer," he said, "because we can produce power on a competitive basis with traditional fossil fuel powered generators, and at the same time have environmental benefits and a byproduct of pure water."

HydroGen Corp.'s technology was developed by Westinghouse Corp. and the U.S. Department of Energy in a $150 million partnership in the late 1980s and early 1990s. In 2001 a group of investors got together and took over the project, launching HydroGen Corp.

HydroGen Corp. acquired all of the intellectual property and hard assets developed in that program through a series of transactions. Now the company plans to install and operate its first major demonstration project, a 400 kilowatt fuel cell power plant, at ASHTA Chemicals Inc. chlor-alkali manufacturing plant in Ashtabula, OH. Installation is scheduled for 2007. The project is supported by a $1.25 million award from Ohio.

Schecter said that in their first five years, HydroGen has raised $40 million, and gone from an eight-person startup to a fast growing company with 60 employees.

Schecter came to HydroGen Corp. from another environmentally friendly fuel industry firm, where his focus was on air pollution control and fuel treatment technology.

"For the better part of 15 years I've been around green companies, trying to do something positive for the environment," he said. Schecter said fuel cells are a source of power not reliant in any way on foreign governments. In addition, they produce pure water, an asset in arid climates.

The early high costs of the technology stalled its development. But these days rising power prices as well as increased environmental regulations are prompting renewed interest in alternative energies, he said.

"But no matter how green we are, or how wonderful we are, no one is going to buy our power if they have to spend more money," he said. "Our business plan shows we can get the cost down to a level that will be attractive to industrial companies, particularly those that produce hydrogen as a waste gas."

Capital Markets Are Open for Business

Elon Musk shares Schecter's optimism from the other side of the investor relationship. He said that although his goal in investing in both Solar City and Tesla is to find solutions to climate problems, that aim will almost certainly reap a profit as well.

> "Being green isn't good just for itself – it's a proxy for good management."

His hope is supported by recent events. In the past two years, several solar companies made huge IPOs. In 2005 SunPower, a unit of Cypress Semiconductor, raised $139 million in an offering underwritten by Credit Suisse Group and Lehman Brothers. Chinese solar company Suntech Power Holdings raised $400 million, and in Germany, Q-Cells raised $288.5 million.

No wonder that clean technology has strong investment support via VCs, private equity, and traditional investment banks with an eye on the future.

According to the 2006 Cleantech Venture Capital Report on North American venture capital investing, by 2009, 10 percent of all VC investment activity will be in the arena of clean technology — up from 3 percent from 1999-2001. That amounts to between $6.2 billion to $8.8 billion invested as venture capital firms go to the markets to raise capital in an estimated 1,000 rounds between 2006 and 2009. The energy component is the fastest growing sector, comprising upwards of 70 percent of investments in the industry, according to EnerTech's Tucker Twitmyer.

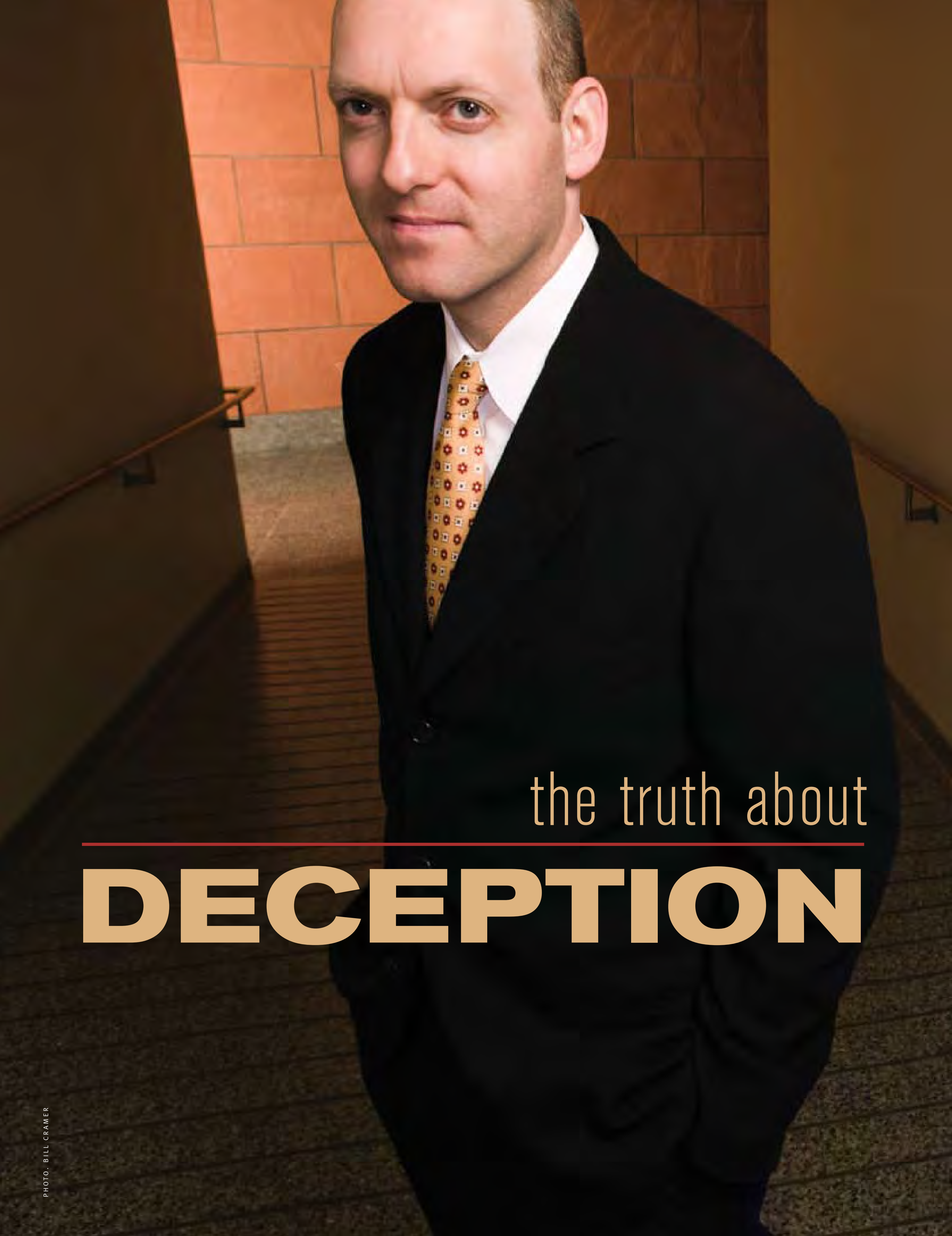
And those sums don't include the internal investments that public companies like BP and DuPont are pouring into clean technology.

At November's Impact Conference, Ranieri shared the investment philosophy he follows at DuPont, a 200-year-old company that is transforming itself for a sustainable future. "Our commitment is to create shareholder value and societal value at the same time," he said. "There is an upside to creating shareholder value in an environmentally sustainable fashion. Being green isn't good just for itself — it's a proxy for good management."

And if the projects funded take off, the whole world will benefit, not just the investors.

Musk concurs. "I think most of the things that do good in the world are also things that make money," he said. "It's unusual where you have a situation where doing good is incompatible with building a valuable enterprise." ◆

Martha Mendoza is a working journalist and a Pulitzer Prize winner. This article includes reporting from Knowledge@ Wharton, "The End of Oil? Venture Capital Firms Raise the Profile of Alternative Energy," published April 26, 2006.



the truth about DECEPTION

PHOTO: BILL CRAMER

TRUST HIM

Operations and Information Management professor Maurice Schweitzer reveals how promises, lies, and envy affect everything from business negotiations to insurance fraud.

BY MEGHAN LASKA

"I just love your new haircut." "Of course it's no problem to take you to the airport." "That's a great sweater..."

Why do we say things we don't always mean? Does everyone use some form of deception from time to time? According to Operations and Information Management Professor Maurice Schweitzer, not only does everyone use deception, but it's something we start learning to use as early as age 3.

"We start to test it out as children," he explains. "A 3-year-old might say something like, 'No, I didn't have a cookie.' testing to see if his use of deception will be rewarded with another cookie. And then you'll give the child feedback like, 'I see cookie crumbs on your face,' and the child will learn to remove physical evidence because that is how he got caught."

Schweitzer maintains that the "laboratory in which we live gives us great feedback with which to improve our ability to tell lies. We get clear and quick feedback as we learn almost every time whether or not our lie worked."

On the other hand, he notes that our ability to *detect* lies is often delayed and imprecise. "When I say that I can't go out because I have to wash my hair, you just don't know if that is true. Or if I tell you that I love that sweater, you won't know. And whenever you visit me, you might put on that sweater. So you get imperfect — or perhaps delayed — feedback. We just don't learn as well in those types of settings."

As a result, Schweitzer says that deception represents a tool — that some people are better at using than others — that pervades many of our social exchanges, particularly negotiations. "I became interested in understanding the mechanics of deception and in particular the judgment process for why people are more or less likely to lie. And that led me to think about trust and the conditions under which we are more or less likely to trust others."

PROMISES AND LIES

how many times have we heard about an executive behaving in an untrustworthy manner or even caught in an outright lie? Can that individual ever regain trust? According to Schweitzer in a new paper, "Promises and Lies: Restoring Violated Trust," coauthored with his former PhD advisor Professor John Hershey in the Operations and Information Management Department, and Professor Eric Bradlow in the Marketing Department, the answer is yes.

"A lot of people say that talk is cheap, but we've found that people really do care about what you say after a rupture of trust," he notes.

The authors reached their findings through an experimental study in which people played a game where they trusted another individual, then the trust was harmed, and attempts were made to recover that trust. Schweitzer explains that people were given $6 and then given the option of either keeping the money or passing it to an anonymous partner, where it would triple to $18 and then the partner could either split the larger amount of money with them — or keep all of it themselves. This game would be played with the same partner at least seven times in a row.

"In the first round, would you pass the $6 to your partner? You would if you trusted that he would return money to you," says Schweitzer, noting that in the first round 90% of people passed the $6, as there was no reason not to trust the partner at that point.

However, after the first round, things became more complicated. After people handed over the first $6, their partners (who were really Schweitzer's research assistants) kept all of the money, giving nothing back. They repeated this untrustworthy behavior in the second round. After this, trust had been severely damaged and most people of course kept the $6 rather than risk losing it again.

So the trust recovery process kicked in on the third round. "After that, I'd have the partner do one of four things: 1) send an apology note; 2) send a promise to return the money; 3) send a note with both an apology and a promise; or 4)

> **"A lot of people say that talk is cheap, but we've found that people really do care about what you say after a rupture of trust."**

send no message. Then, the partner would start behaving in a trustworthy manner. Also, the test subjects would get to see what the partner would have done in each round regardless of how they chose to play. So if the test subject kept the $6, he or she would still find out whether the partner would have split the money or kept it all."

He continues, "We had a measure of how much the subjects were willing to trust over time. This enabled us to compare the trust recovery rates across different conditions. One key part of this research was our focus on deception. In some conditions, we had our research participants engage in deception as well as behave in an untrustworthy way."

The findings were surprising: trust that is harmed by untrustworthy behavior can be restored to initial levels. However, trust that is harmed by untrustworthy behavior and deception never fully recovers, as the deception causes enduring harm to the trust.

He maintains that this is an important lesson for business leaders. "If a CEO behaves in a way that is untrustworthy or even just perceived as untrustworthy then it's important to know that communication can help to restore trust. Maintaining credibility in what you say is the key. For example, a CEO can make a promise to change a course of action and this by itself can be very effective in speeding trust recovery — as long as he hasn't been caught lying in the past. That is, words can repair trust very effectively, but people have to be able to believe the words."

LIE DETECTORS

while much of his research on deception and trust is in an experimental setting, Schweitzer currently is working in the field studying how insurance companies detect fraud. He has conducted this work with another Wharton PhD graduate, Danielle Warren, who is currently on the faculty at Rutgers. The issue he's focusing on is the importance of interviews by insurance investigators in detecting fraud.

"Most insurance companies have a lot of people who handle claims, but surprisingly few people who actually investigate potentially fraudulent claims. I'm looking at whether there is a way to focus the attention of investigators," he explains.

Schweitzer notes that he is finding that in-person interviews are a very important tool in detecting fraud even as investigators increasingly rely upon database searches, physical evidence, and sophisticated investigative techniques like accident reconstruction and surveillance. "Unlike a lab environment, there is a serious self-selection issue in the field where people who decide to tell lies are making a personal choice to try to get more money by using deception at the risk of getting caught. In this setting, when the stakes are high, people might convey deception by being particularly excited. Or, a claimant might try to avoid an interview altogether. People who avoid interviews are actually communicating a lot of information."

The message for insurance companies, according to Schweitzer, is to keep investigators on the ground and make sure they have strong interpersonal skills. "They might be more expensive, but they are very valuable to the organization from a detection and deterrent standpoint."

FEELING AND BELIEVING

schweitzer's research also shows that emotions can have a great deal of impact on trust judgment. In another recent paper, "Feeling and Believing: The Influence of Emotion on Trust," coauthored with Wharton PhD student Jennifer Dunn, they found that when a person experiences bad traffic or recently received great personal news, those feelings will be carried with them into a morning meeting at work, influencing the way that person will trust colleagues.

"Most research has looked at trust as a cognitive decision, where people are making cool, rational judgments. However, a lot of our trust judgment — particularly for people we don't know well — is influenced by emotions. I'm asking myself, 'Should I trust this person?' And I'm answering that question by checking to see how I feel. Well, if I feel pretty good then that feeling will influence my trust judgment."

To test this, Schweitzer and Dunn ran five experiments in which test subjects would do things like watch video clips, engage in writing tasks, or fill out surveys to make them focus on particular emotions like happiness or anger.

How can you make a perfect stranger feel angry or happy? According to Schweitzer, inducing emotion is "shockingly easy." He points to an experiment they conducted at the train station as an example. "We asked people to list three things that made them really happy or angry and then to write about it in great detail. Sometimes people were actually ripping the page with their pen they would become so mad." After inducing a particular emotion through these tasks, the subject would rate their trust in a co-worker across various things.

"We found that there is clearly an affective component between emotions and how much you trust people you don't know that well," he says, noting that this doesn't work for people you know well. "For example, I know how much I trust my mother because it's a recall judgment and not a matter of how I am feeling at that moment."

He says that in business, you can see how it's important for teams to bond because when colleagues become friends then judgments are made based on recall as opposed to recent emotion. "Why do business people go out together to sing at karaoke bars? Why do business people go out drinking heavily? It's doing very important work that is extremely hard to do otherwise. It's also why sales people tell you funny anecdotes and ask you about your kids to bring you to a happy place before asking you to purchase a product. I think we sort of know that this chit chat (called nontask communication) is important, but this research gives us a sense of why that is the case and what they should be doing while they chit chat."

Schweitzer adds that bonding through alcohol consumption is perhaps even more important in business than many people might think. In earlier research, he studied the effect of alcohol in negotiations and found that while it leads to inefficient negotiations, the consuming of alcohol can actually cement one's place in a work group.

"There has been no other work on alcohol in negotiations, but it's an important part of a lot of business transactions and it's worth thinking about its functional role," he says. "Introducing alcohol transforms one kind of meeting into another kind of meeting. It lowers inhibitions and in some cultures, like in Japan, people think they can't truly know you unless they've been drinking with you. It's a critical form of bonding."

FEELING GREEN

another important part of the trust process is the emotion of envy, a "delicious" research topic according to Schweitzer, who is currently studying with Jennifer Dunn and Simone Moran, a professor at Ben Gurion University in Israel, how social interactions can produce envy and how envy impacts subsequent interactions.

"Imagine the following — you are in a work group that works collaboratively together selling books and someone in your group is selected as the employee of the month. She gets her picture on the wall, a bonus, and a special parking spot. And then she goes back to her work group. The question is: how do the coworkers feel that didn't win? What are they likely to do to that returning coworker, and having won the award, will the coworker trust her colleagues any differently?"

Schweitzer says that he's finding that "people feel envy when they are outperformed in a self-relevant domain (an area you care about) by a similar other (a peer)." He explains, "It's the guy in the cubicle next to me who I compare myself to, but when it's somebody much higher or lower in status then it doesn't really matter."

He notes that there are three approaches people might take: you might try to avoid the outperformer, you might try to level up, or you might try to drag him down. "In leveling up, you see a coworker has gotten an award and you work even harder to get the award yourself. In leveling down, you see the coworker win the award and you want them to suffer and to bring them back to your level."

Under what conditions people will level up or down and how people perceive a path to success is important. "If they see that they can achieve success then they will exert more effort. The employee of the month should motivate other employees. But what is interesting about envy is that it is a socially sanctioned emotion so that when you win, people will always tell you congratulations and that they are happy for you even if they then go home and kick their cat. In reality, most people who feel envy will not say, 'It's great that you won that award, but I'm envious and will avoid you for a while until I get over it.'"

Schweitzer points out that most coworkers who experience envy are much more likely to lie to the person who wins the award and engage in actions to undermine that person, such as sharing less information. He notes that he has evidence so far to suggest that the award winner doesn't expect this. The award winner will feel great and continue trusting congratulatory coworkers just as much if not more than before the award.

So what should companies do to reward good employees without creating such a dynamic? Schweitzer says that in some cases, companies should give awards in private rather than in public as well as think about structuring workgroups that are heterogeneous so that social comparisons won't be as grating. Also, they should think about reassigning workers if there will be negative competition and make it clear for employees what the path is for success.

"Another option is to think about several smaller awards rather than very few large awards," he says. "One key problem with envy is that we have a hard time anticipating envy. When we enjoy success, we have to work at trying to imagine how others might feel. My own view is that we're not very good at that because we are busy enjoying our success."

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SETTING GOALS

schweitzer's work also has identified problems with one of the most pervasively used motivation tools: goal setting. Managers need to think very carefully about the goals they set for employees. The intent of goals is to focus and motivate employees to work harder, but what happens when the employees miss the goal, especially if they fall just short of the goal?

According to Schweitzer, they are likely to cheat. "For example," he says, "a lawyer might be given a goal of billing 2,000 hours. Finding herself just short of the goal, will she report the actual amount she worked? Or will she report having billed 2,000 hours?"

In an article coauthored by Schweitzer, Lisa Ordonez of the University of Arizona, and Bambi Douma of the University of Montana, "Goal Setting as a Motivator of Unethical Behavior," they found that "people with unmet goals were more likely to engage in unethical behavior than were people attempting to do their best." And "the relationship between goal setting and unethical behavior was particularly strong when people fell just short of reaching their goals."

Schweitzer explains that if you set specific challenging goals like to sell 30 cars in a month then people will outperform employees who are given low or vague goals such as "just do your best."

"In general, people exert more effort and work more persistently to attain difficult goals than they do when they attempt to attain less difficult goals or to 'do their best,'" according to the authors. Schweitzer notes that this relationship is so strong that many have "pushed this in management education almost like a religion."

But what happens when the salesman only sells 29 cars that month? Is he then more likely to back-date the first sale of the following month to make it appear that he met his goal? Schweitzer says that it's not hard to find examples of how goal setting has resulted in "cooked books" and false sales reports.

Since goal setting motivates *unethical* behavior when people fall short of their goals, he maintains that managers need to use it cautiously and be ready to monitor performance.

SUNNY DAYS

with such a focus on unpleasant subjects like deception, mistrust, and envy, you might wonder what kind of guy Schweitzer is? But his students have rated him so highly that he's won the David Hauck Award for Excellence in Teaching (Undergraduate Division) in 2002, the Outstanding Teacher Award (Undergraduate Division) in 2002, as well as the Whitney Award for Distinguished Undergraduate Teaching in 2000.

He currently teaches negotiations in both the MBA and Executive Education Divisions and was one of the first faculty members to develop a simulation through the Alfred West Learning Lab, which was established at Wharton in 2001 after a $10 million gift from **Alfred P. West, Jr.**, WG'66, chairman and CEO of SEI Investments.

Schweitzer developed the oil pricing simulation called OPEQ for his negotiations classes to teach issues involving shared resources and incomplete information. Students participating assume the role of an oil-producing country and set production levels in a competitive environment with little or no knowledge of their competitor's intentions.

"I really believe in the Learning Lab," he says. "Teaching is an important part of our mission at Wharton."

The Los Angeles native earned tenure last year and lives in Bryn Mawr with his wife and three young daughters. When he's not at Wharton, he's often coaching soccer for his oldest daughter.

Schweitzer — who earned his undergraduate degree in economics at the University of California at Berkeley and both his Masters and PhD at Wharton in the Operations and Information Management Department — got his first job at the University of Miami. He came to Wharton as a visiting professor and joined the faculty in 1998.

Although he sometimes misses the sunny weather of Miami and L.A., he says that Philadelphia is an attractive city because of the strengths of the Wharton students, staff, and faculty. "We have a collection of very smart and interesting people here in West Philadelphia. So smart and interesting, in fact, that smart and interesting people from all over the world come here too — it's not because of the weather or the view." ◆

Plateauing: Redefining Success at Work

Why some talented managers are choosing balance over the boardroom

As an executive coach who works with corporations, Monica McGrath has her ear to the ground. And what she is hearing is this: A number of men and women in middle management are increasingly reluctant to take the next step in their careers because the corporate ladder is not as appealing as it used to be, and the price to climb it is too high. "These people are still ambitious, and they are still driving. They just aren't driving for the same things they were driving for 15 years ago," she says.

What may be happening, suggest McGrath and others, is that people are setting career paths based on their own values and definitions of success. They are not burned out or dropping out; they are not going back to school and changing careers; they are not having a mid-life crisis. Instead, they are redefining how they can keep contributing to their organizations, but on their own terms. Rather than subscribe to the "onward and upward" motto, they are more interested in "plateauing," unhooking from the pressure to follow an upward path that someone else has set.

A number of oft-cited trends in the workplace contribute to this phenomenon: Technological advancements are breaking down the barriers between work and non-work hours, adding to the pressure to constantly be on the job or on call. Strategic decisions like restructuring, downsizing, and outsourcing are adding to job uncertainty at all levels and reducing the number of promotions available to mid- and upper-level managers. The continuing influx of women into the workforce keeps raising the level of stress when it comes to work/life balance issues.

Lois Backon, a vice president at Families and Work Institute (FWI), a New York-based non-profit research organization, points to a report FWI does every five years entitled, "National Study of the Changing Work Force." The latest one was released in 2003. One of their areas of research relates to what the organization calls "reduced aspirations" among various sectors of the workforce. "This is an incredibly important issue, and it offers some of the most troubling data out there for corporate America," she notes.

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For example, in one of its latest reports, "Generation & Gender (2004)," which uses data from the national study to determine differences among generations, FWI found that fewer employees aspired to positions of greater responsibility than in the past. Among college-educated men of Gen-Y, Gen-X, and boomer ages, 68% wanted to move into jobs with more responsibility in 1992, versus only 52% in 2002. Among college-educated women of Gen-Y, Gen-X, and boomer ages, the decrease was even higher: 57% wanted to move into jobs with more responsibility in 1992 versus 36% in 2002. (Generation Y is typically defined as those born between 1980 and 1995, Generation X as those born between 1965 and 1980.)

"We then did a more focused look at leaders in the global economy," Backon says. "We took the top 10 multinational companies — such as Citicorp and IBM — and conducted in-depth interviews with the top 100 men and top 100 women. Of those leaders, 34% of the women and 21% of the men said they have reduced their career aspirations."

This plateauing is part of a bigger phenomenon in the workforce — one that also includes people putting higher priorities on activities outside their jobs, from family to volunteer work to hobbies. For example, in the FWI study, the reason that the majority (67%) of these leaders gave for their response was "not that they couldn't do the work, but that the sacrifices they would have to make in their personal lives were too great," says Backon.

"We call it 'negative spillover from their jobs to their homes,'" Backon adds. "The whole issue of overwork, of needing to multitask, of having to deal with numerous interruptions during their work day" affects employee attitude, not just toward their jobs but also their free time. "Based on our research, we know that 54% of employees are less than fully satisfied with their jobs, 38% are likely to actively look for new employment in the next year and 39% of employees feel they are not engaged in the work they are doing." Most employees "do want to feel engaged by their jobs. The term 'reduced aspirations' does not mean they are not talented or not good at what they do. They are. But in focus groups, they also say things like, 'I need to make these choices because my family is a priority,' or 'I need to make these choices to make my life work.'"

One way to look at this phenomenon, adds Wharton's Nancy Rothbard, an assistant professor of management, is that some employees "still derive some sense of identity from their jobs but they have, or are seeking, other ways to get that fulfillment." They are no longer pushing for the bigger raise, the larger staff, the more prestigious title; "they are taking energy that had been focused primarily on goals defined by the corporation and focusing it elsewhere."

Fewer Promotions, Fewer Pensions

Peter Cappelli, director of Wharton's Center for Human Resources and George W. Taylor Professor of Management, has done extensive research into the changing nature of the workplace. As he and others have noted, companies no longer promise job security, generous benefits packages, or even pensions, and employees no longer feel loyal to their employers or obligated to stay for long periods of time. Employees are responsible for managing their own career track and seeking out the mentors and training they need to move on in their current company or, just as likely, in a new company.

Cappelli agrees that organizations "don't have quite as much influence over people as they used to in terms of shaping their goals and aspirations, in part because people come to these jobs at an older age and change jobs more frequently than in the past. Does that necessarily mean people are on their own career path? It depends what you mean by that. I'm not sure it means they are eschewing corporate success. But they are looking outside their current employer's definition of success, more so than in the past."

Cappelli cautions, however, that it's unlikely employees can go on cruise control and still hope to be retained and valued by their employers. "It used to be you could just lie low and wait for the pension. That doesn't happen much any more." And while some employees may not pay as much attention to the goals that their companies want them to pursue, they "continue to work hard because they are afraid of being laid off.... Companies systematically go through and fire people who are not pulling their weight. The ability to punish people into appropriate behavior is one of the great and unpleasant lessons of the 1980s. Employee morale sank and productivity stayed up because people were afraid of being fired," Cappelli notes, adding, however, that this dynamic changes in a tight labor market.

Wharton's Sara Kaplan, an assistant professor of management, "could imagine a scenario where people have discovered that there is not too much point being loyal to their employers, and then go on to say, 'Okay, I have gotten where I am going to get, and I am going to focus on the other part of my life. I will keep working but won't invest all my energy in my job.'"

But Kaplan also thinks "everyone needs something to be passionate about, so it would be hard for me to imagine that people would simply ramp down on their job without having a crisis or without having found something else" to interest them. Indeed, in today's economy, she adds, "you can't keep your job unless you are engaged, to a certain extent. Corporations don't want people who don't want to go higher. They don't want people who won't strive. You can't plateau; there are always people biting at your heels."

Directly related to the issue of job satisfaction is the question of job design. "Management scholars have been studying this for a long time," says Sigal Barsade, Wharton associate professor of management. "Whenever a company designs a job, it must take into account how employees view that job, whether their goal is to get ahead, whether work is central to their lives, and so forth. A company can make a real error trying to redesign a job to be more enriched if the employee doesn't want that," especially if the new job definition requires them to work harder.

What is crucial, Barsade says, "is good job fit. Is the person doing what the company needs done? If the answer is 'yes' and the person also is good at what they do but simply doesn't want to do more, then that could actually be a good situation, especially for jobs that don't include room for promotion." This is applicable in particular to customer service positions where people need to be engaged while they are providing the service, but are not expected to be thinking of ways to redesign the whole customer service system. "So the fit needs to be between what the organization needs and what the employee wants and values. If that fit isn't there, that's when you are going to have a problem."

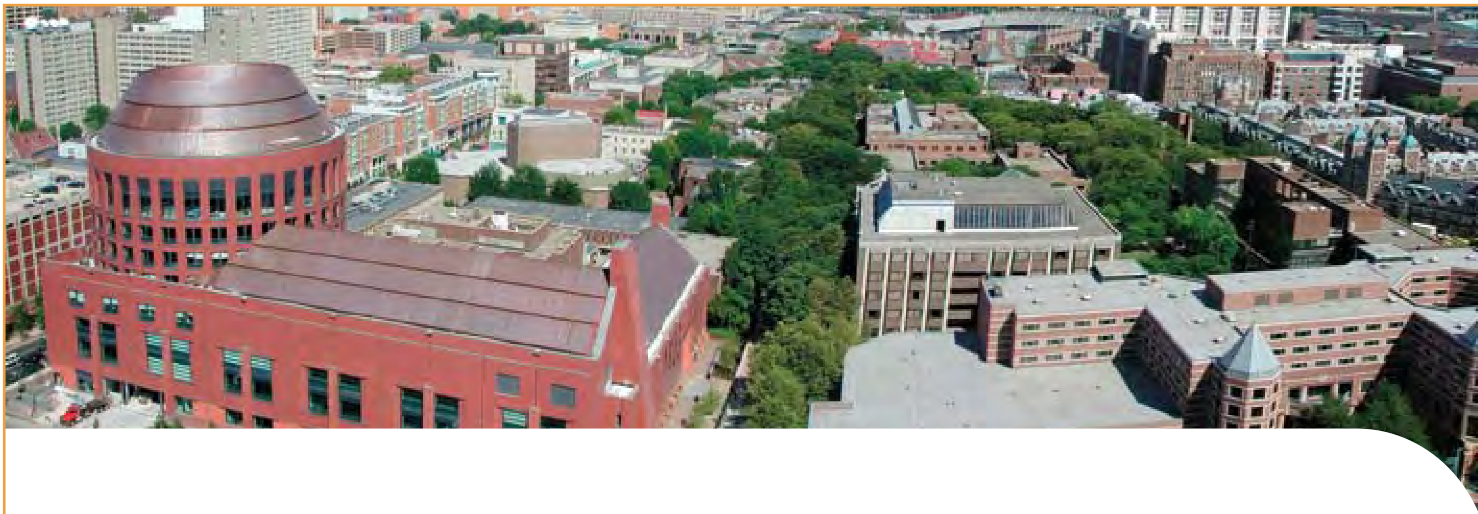
Making Tradeoffs

Kathleen Christensen, who directs The Program on The Workplace, Work Force, and Working Families at the Alfred P. Sloan Foundation, suggests that plateauing in one's job "is a completely natural part of a career, but we ignore it because we have this notion of a steep trajectory." Psychologists, she says, "talk about different stages of human development. One stage may be that as people reach middle age, there is the idea of generativity — a willingness at this point to start giving back, perhaps start cultivating others rather than just" focusing on your own achievements. Plateauing can be desirable, she says, in that employees "are likely to have a great deal of institutional knowledge. They can be the ones who know the processes, can share them and guide others. If everyone is always out for themselves, it goes counter to developing the team culture that every company wants."

No matter how people define their jobs, Christensen adds, "they still must have performance goals, and be evaluated in terms of how well they meet those goals. But we should also recognize that at different points in people's lives, they may define their performance goals in slightly different ways — they may move at different tempos — and still be well within what the company needs in order to achieve its business goals."

Plateauing cuts across all boundaries, Christensen suggests, and it could be the result of certain events in people's lives — like the birth of a child or the need to care for a sick parent — which lead an employee to decide, "I'm going to hold my own but not try to climb." But it would be "a mistake to assume that all the factors that lead to different tempos are due only to outside forces. It could just be an employees' own decision not to try to climb" in the organization. It doesn't mean they are slacking off. "Someone can be working hard and still be plateauing in a career," Christensen says.

At Deloitte & Touche USA LLP, senior advisor Anne Weisberg is involved with a pilot program called mass career customization, which allows employer



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What Hewlett-Packard's Spying Crisis Tells Us About the Limitations of Corporate Boards

The crisis at Hewlett-Packard over allegations that its chairwoman, Patricia Dunn, authorized illegal surveillance of HP board members in order to find out who leaked sensitive company information to the press, is dragging on, perhaps longer than most people first expected. And it has raised a number of important issues about corporate governance, privacy protection and surveillance of employees. Tom Donaldson, professor of legal studies and business ethics at Wharton, joined Knowledge@Wharton to talk about HP's woes as they relate to business practices both in the U.S. and abroad. Donaldson's research areas include business ethics, leadership, risk management and corporate compliance. He has consulted with companies ranging from Goldman Sachs and Wachovia to Exelon and KPMG, and is currently working on articles about corporate risk management programs and cash management practices at non-profit organizations.

Listen online, download, subscribe via iTunes, or read the transcript at: **‹knowledge.wharton.upenn.edu/article.cfm?articleid=1522›**

and employee together to customize an individual's career "along a defined set of options." It's a realization, she says, that "the 'one size fits all' approach no longer works." In the pilot program, which started in June with a practice group of 400 people and will run for a year, "we have unbundled the career into four dimensions: role, pace, location and schedule, and work load." Under the role dimension, employees can specify, for example, whether they want an external role involving significant client interaction, an internal role without that client service aspect, or a role somewhere between the two. Under pace, the issue is how quickly an employee wants to move up. Under location and schedule, issues such as part-time hours, working at home, and willingness to travel are included, while work load looks at variables like the number of projects an employee is willing to undertake at any one time.

"There are tradeoffs to these choices," Weisberg emphasizes. "A totally internal role has a different compensation structure and advancement route. But the tradeoffs are articulated and an employee can move from one set of options to another. It's a recognition that people need to fit their work into their life and their life into their work over the course of their career, which is 40 years. No one solution will work" for all that time. (Interestingly, she notes, the pilot program so far has found that "rather than dialing down on their careers, most of the practice group is choosing to dial up," reflecting, in part, the fact that 65% of Deloitte's employees are under the age of 35.)

Companies can't redefine the corporate ladder "with a different model that is just as rigid," Weisberg adds. "We need to replace the corporate ladder with a corporate lattice" — a term implying a more adaptive kind of framework which allows an individual to move in many different directions, not just upward or downward. "I know in many companies, employees are evaluated on the basis of how much time they spend on the job or how many sacrifices they make. That paradigm has to shift so that you look at performance and contribution separate from sacrifice."

Weisberg, senior advisor to Deloitte's Women's Initiative, says that when the initiative was started in 1993, it was concerned primarily with women's career paths, which are very different from men's. (For example, the vast majority of women, about 80%, do not work fulltime continuously throughout their career, whereas the vast majority of men do, she notes.) "But we quickly realized these issues affect many groups other than women, including men, members of Gen X and Gen Y who perhaps want to accelerate early and then decelerate later, and the baby boomers" who are trying to adjust their workloads to accommodate interests or responsibilities outside of work. What's been missing, she says, "is a way to approach all these different people with a consistent set of options." On the micro level, she adds, "it is fundamentally a negotiation between the employer and employee," which is why it is so important to develop "the right kind of negotiation framework."

In scanning the 2006 employment landscape, Weisberg says she sees a "heating up of the war for talent. If you look at the demographics, there is a huge shortage in many of the knowledge-based industries. That is going to be with us for a long time." She cites a recent statistic that women now make up 58% of college graduates, a trend that should affect even more how jobs and careers are structured. "Smart employers don't want to drive their employees so hard that they burn out. That is very expensive."

In the past, she says, "we used 150% of salary as the cost of turnover. We are now using 200% of salary." Some experts say that for knowledge-based companies, that figure is 500%. "Turnover is a huge cost. One of the major reasons for doing mass career customization is to improve retention."

Weisberg, too, suggests the need for transparency in any decisions related to the work environment. When both employer and employee are clear about the choices being made, "then both sides are more satisfied with the arrangement. If choices are never discussed, you can end up with mismatched expectations, which can lead to stress on both sides."

Wharton management professor Stewart Friedman, who teaches Wharton Executive MBA students, among others, agrees that "people are struggling with this issue of, 'What do I really care about and how do I measure success?' My sense is that more people, not just middle-aged employees but younger people as well, are raising this question in ways they didn't 20 years ago. If so, is it because more people are hitting the pyramid and accepting the reality of lowered expectations caused by less upward mobility, or is it that they are part of a larger swing in our culture that is more focused on other definitions of success besides economics? I think it is probably both."

Disappearing Flex Time

It's not clear how managers in organizations might react to employees who redefine their positions as jobs rather than as vocations or callings. "They could worry that people simply decide to 'work to rule,' — i.e., do exactly what is specified and nothing more," says Rothbard. "Companies are terrified of that happening: They know things will break down at that point because you can't specify everything that has to be done in a particular job. But I think if employees' identities are still tied up in their jobs, this won't happen."

Another consideration is how to continue to motivate people if none of the traditional rewards are available — such as a promotion or a bigger office. "A company may, in fact, want employees to have other sources of fulfillment, and so will try to build in things that matter to them," says Rothbard. That could include flex time, job sharing, job sabbaticals, or the sponsorship of charity events that are meaningful to employees.

Rothbard continues to find it ironic that employees who want to "opt out" of their jobs for a short time get less pushback than women who want flex time "so that they can pick up their children from school at 4:30 instead of 5:30 every day." Rothbard cites Arlie Hochschild's book *The Time Bind*, which notes the exceptions available to high-potential men who want to take a sabbatical and travel around the world. In one chapter, Hochschild relates how two men had asked their supervisor for time off to do underwater photography of coral reefs. The supervisor granted them an educational leave to pursue their project. Why, the author asks, can't the company offer flexible schedules to parents who want to pick up their children early from daycare?

Rothbard also points to research on the phenomenon of "multiple roles, and the fact that there are physical as well as psychological benefits to people" who have more than one area in their lives that engages them and requires their attention. An example would be a woman who has responsibilities both at her job and with her family at home. The research discusses "the buffer hypothesis, which says that if something goes wrong in one area, you then have another area that buffers you," says Rothbard. "In other words, work/family roles enrich, rather than deplete, each other." ◆

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india Knowledge@Wharton

Despite Growing Debt, the Indian Consumer Banks on Tomorrow

Reserve Bank of India (RBI) governor Yaga Venugopal Reddy has been sermonizing from his financial pulpit these days. Reddy, the Indian equivalent of Federal Reserve chairman Ben Bernanke, though with a trifle less independence, has focused on the dangers of the new credit culture. While corporate borrowers can watch out for themselves, he says, individuals are at risk.

"Rapid economic growth, coupled with demographic dynamics, has led to a significant change in consumers' perceptions in our country," Reddy said at the Foundation Day meeting of the Bank of India in September. "With a burgeoning middle class and changing lifestyle aspirations, more and more people are resorting to debt to finance their consumption and asset creation. At some stage in some cases, this could potentially lead to excesses, precipitating defaults."

Read in English at **‹http://knowledge.wharton.upenn.edu/india/article.cfm?articleid=4105›**

Marketing by the Numbers, for the Private and Public Sectors

Wharton School Publishing's marketing titles include the American Marketing Association's best book of 2006.

This year the top publishing honor from the American Marketing Association (AMA) went to a Wharton School Publishing title. *Managing Customers as Investments* by Sunil Gupta and Donald Lehmann was awarded the 2006 Berry-AMA Book Prize for the best book in marketing. The prize recognizes books published conveying innovative ideas that have had significant impact on marketing and related fields.

This quarter's focus is on marketing titles in the Wharton model — innovative, implementable, and empirically based.

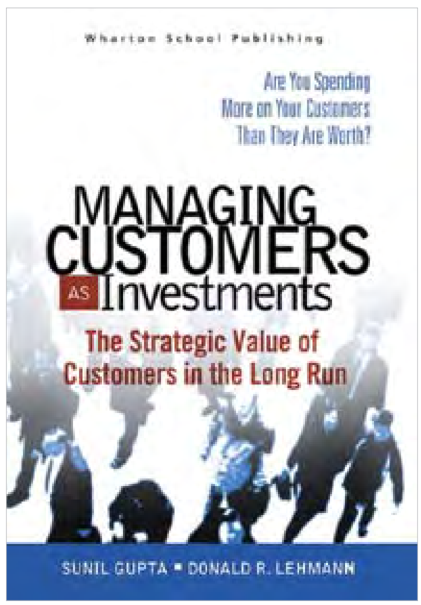
A Financial Approach to Customer Valuation

Managing Your Customers as Investments: The Strategic Value of Customers in the Long Run

By Sunil Gupta and Donald Lehmann

It's more important than ever for companies to objectively assess the value of their customers. But conventional measures of "customer lifetime value" haven't been linked to overall business value and haven't been useful to senior managers. *Managing Customers as Investments* overcomes both shortcomings by bringing together both customer and financial views of marketing, demonstrating a rigorous yet simple approach to measuring the value of customers, and how to use the results to improve marketing decisions and ROI.

Through practical examples and case studies, Columbia Business School professors Gupta and Lehman offer managers in-depth insight into calculating customer lifetime value (CLV) and using CLV to improve a company's bottom line. Furthermore, it provides practical tools such as the "two sides of customer value" framework to identify priority customers and a step-by-step



approach to what it takes to become a customer-centric organization." Key takeaways include how customer value calculations impact customer acquisition, service, retention, and segmentation, as well as strategic M&A and alliance decisions.

A Marketing Roadmap to Improved Performance

Marketing in the Public Sector: A Roadmap to Improved Performance

By Philip Kotler and Nancy Lee

It is hard not to consider how government agencies have experienced failures in the past by not reading the market environment correctly. For example, the U.S. Post Office lost a great amount of business by failing to recognize Federal Express and UPS as growing competitors.

How can government agencies meet the increasing pressures to improve performance outcomes and demonstrate a positive return on investment of resources and taxpayer dollars? By implementing a strategic marketing plan.

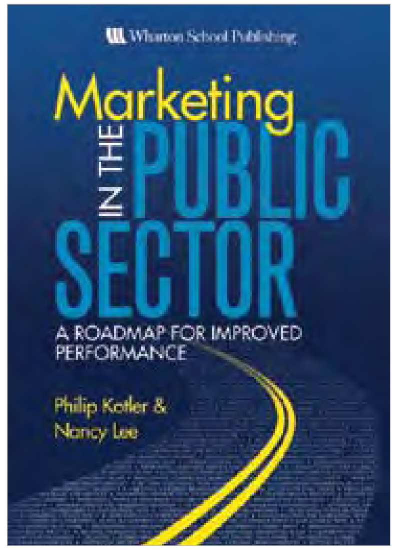
Marketing in the Public Sector: A Roadmap to Improved Performance, the new book from world-renowned marketing expert Philip Kotler, S. C. Johnson Distinguished Professor of International Marketing at Kellogg School of Management, and social marketing consultant Nancy Lee, shows how a strategic marketing plan can help government agencies create citizen support for its programs, improve public health and safety, increase revenue, decrease operating costs, and ultimately improve customer satisfaction and increase citizen usage of the services they provide.

The book presents readers with a marketing toolbox featuring not only the famous 4Ps (product, price, place, promotion), but up-to-the-minute marketing techniques from the private sector tailored specifically for government agencies. It will help professionals in the public sector understand that successful marketing is more than communications, more than sales, and has at its core, a citizen-oriented mindset.

Using examples from around the world, Kotler and Lee illustrate how the same marketing principles and techniques that are used in the for-profit sector to sell more coffee, for example, can be used in the public sector to create citizen support and influence positive public behaviors. They offer no-nonsense roadmaps on how to create a strong brand identity, gather citizen input, and evaluate efforts.

For example, when it comes to influencing public behavior, Kotler and Lee suggest using social marketing practices. They describe 12 principles you should follow when embarking on a social marketing campaign, with #9 being "Have a Little Fun with Messages."

To this, Kotler and Lee write, "Using humor to influence public behaviors can be tricky, especially for the government.



There are times when it isn't appropriate for the target audience (e.g., victims of domestic violence)….You are encouraged, however, to look for opportunities where it might be appropriate for the audience, where it wouldn't be inconsistent with your brand, and where it may be just the right emotion to garner the attention, appeal, and memorability you want in your campaign."

The example: the city of Austin, TX, Watershed Protection Department's campaign to remind pet owners to clean up after their pets in city parks. The department makes Mutt Mitts available in *Scoop the Poop* boxes in each park. The public response: the city estimates that they removed 135,000 pounds of pet waste and related bacteria from watersheds in a single year. (**www.ci.austin.tx.us/watershed/wq_scoop.htm**)

The final chapter pulls it all together by presenting a step-by-step model for a high-impact marketing plan, helping the agencies and non-profits become the "high-tech, high-touch" organizations that we need them to be, while delivering more value for every penny spent. ◆

Alumni Association Update

A Call to Connect

TAMA L. SMITH, WG'90

DEAR FELLOW ALUMNI,

It is with pleasure that I greet you as the new Chairwoman of the Wharton Alumni Association Board of Directors. The Board is charged with overseeing the 81,000 person community worldwide which includes all Wharton alumni — undergraduate, graduate, and PhD. It is our mission to enhance our world-class alumni community, to truly engage (and re-engage) all of you. In order to achieve this mission, we are committed to continuing to strengthen our alumni and affinity clubs worldwide, and identifying new resources, and implementing new services that meet the needs of all of you…wherever you are in your alumni lifecycle.

Our goal is simple — to better connect our community and to find new ways to engage all alumni. In order to do this, we need to hear from you. Whether you are a dealmaker, corporate executive, chief family officer, entrepreneur, artist, philanthropist, retiree, or recent graduate — your opinion is critical to our mission of improving the quality and delivery of the Wharton alumni value proposition.

World-Class Alumni Board

Our Board is in the midst of significant transformation and I am excited to announce the recent election of Corridor Capital CEO, **Craig Enenstein**, WG'95 G'95, as Board President. I look forward to partnering with Craig as we lead our Board forward in its next stage of evolution. Craig has been a major contributor to the Board over the past five years, most recently by successfully restructuring the Wharton reunion program, now stronger than ever before.

We were also excited to have eight alumni join our Board in July 2006 who are committed to lending their expertise and leadership to move our mission forward. They are:

Christian Hernandez, WG'03, Strategic Partnerships Manager, Google, Inc. (London, England)

Janet K. Kinzler, WG'92, Portfolio Manager, SIT Investments (Minneapolis, MN)

Rocky Lee, WG'95, GrW'07, Partner, Pounce Sports LLC (Philadelphia, PA)

L. David Mounts, WG'04, EVP & CFO, Domino's Pizza, Inc. (Ann Arbor, MI)

Rob Newbold, WG'99, Managing Principal, Graham Partners (Philadelphia, PA)

Vedat Sadioglu, W'86, Managing Partner, Kapital Factoring Hizmetleri A.S. (Istanbul, Turkey)

Leslie Morgan Steiner, WG'92, General Manager, The Washington Post (Washington, DC)

Ronica Wang, WG'90, Managing Partner, InnoGrowth (Hong Kong, Toronto)

and returning to the Board, **Meesh Joslyn Pierce**, W'93, WG'98, Gibraltar Homes LLC (Los Angeles, CA).

How You Can Make a Difference

As I traveled around the globe this past year meeting many of you at the Global Alumni Forums in Mumbai, Istanbul, and Rio de Janeiro, it became clear to me that we need to continue doing more to bring us closer together. Our Board is determined to better connect (and reconnect) each of us through shared interests, to identify new levels of services that meet the changing needs of our ever evolving life stages…and to hopefully have a positive impact on the larger world community in which we live.

For each alumnus, the Wharton alumni value proposition means something different. Our Board has been working closely with the Wharton administration to ensure that we can deliver to each of you the appropriate Wharton alumni product. We will continue to enhance the Wharton alumni experience by delivering professional, social and educational benefits to our alumni at various lifecycle stages locally, regionally and globally. We are committed to continuing professional education, world class reunions and global forums, Wharton brand protection and development, top-notch student recruitment, lifetime career support and innovations to maintain the relevance of the Wharton experience throughout one's career and beyond into retirement. We're here for you and we're waiting to connect with you.

Just give me a call at 310-229-5951

Tama L. Smith, WG'90
Board Chairwoman, Wharton Alumni Association
President, Tama Smith & Associates, Inc.
tsmith@tsassociates.com

A Call for Nominations to the Wharton Alumni Association Board

In the spring of 2007, we will nominate and elect a slate of Alumni candidates to join our Alumni Association Board beginning in July 2007 for terms ranging from one to three years. If you have a demonstrated track record of volunteer and giving participation to the School and our global community and are excited about making a significant contribution to Alumni engagement — please contact Trina Middleton with Wharton's Annual Affairs & Annual Giving department for a Nomination Form at **trinalm@wharton.upenn.edu** or 215-898-3394. All recommendations and self-nominations are welcome.

Upcoming Alumni Club Events

For a complete, up-to-date list of events, visit **‹www.wharton.upenn.edu/alumni/clubs/›** or your regional club's website.

February 8, 2007

The Wharton Club of Chicago will host a lunchtime business forecast program from 11:30 a.m. to 1 p.m.

February 17, 2007

The Wharton Club of Washington, DC, joins with the DC Penn Club to host an area performance of the Penn Glee Club's new spring musical, the Glee of Clubs. To be held at The Blair Family Center for the Arts at The Bullis School in Potomac, MD, the event starts with a performance at 7:30 p.m., followed by a dessert reception.

February 21

The Wharton Club of Southern California will host its bi-monthly Wharton Women (WW) — Orange County networking breakfast at 7 a.m. at the Sports Club in Irvine.

April 17

The Wharton Club of New Jersey will host guest speaker Harvey Pitt, Former SEC Chair, at 6:00 p.m.

Wharton Club of Germany/Austria Announces New Structure, Celebrates Second Oktoberfest

The Wharton Club of Germany/Austria (WCGA) covers a lot of territory. Comprising 250-plus alumni in two countries, for 13 years the Club grew under the leadership of its president, **Dr. Wolfram Nolte**, WG'77. In addition to building the Wharton brand in Germany and Austria and planning local gatherings like the Munich "Stammtisch," a regular meeting and gathering of alumni living in Munich, Nolte led the organization of the Wharton Europe Conference in 2003 in Berlin.

In 2004, **Jürgen Habichler**, WG'01, took over the Munich Stammtisch organization, organizing festive events, including a beer tasting and a Christmas market outing. One of the highlights begun in 2005 expanded beyond Munich alumni. The first Wharton Oktoberfest was a national gathering of Wharton grads at the original Oktoberfest in Munich, drawing

BERND WENDELN, WG'04, AND JÜRGEN HABICHLER, WG'01, THE NEW PRESIDENT OF WCGA, AT OKTOBERFEST

MIRJAM LAUX, WG'04, JÜRGEN HABICHLER, ARTHUR STEINBÖCK, WG'05. AT THE SECOND ANNUAL EVENT, HELD IN MUNICH.

PHOTOS . JÜRGEN HABICHLER

participants from all over Germany and Austria, as well as the U.K., the U.S., and Israel.

Inspired by the first successful Oktoberfest, in the spring of 2006 a small group of Wharton grads started discussions on how to invigorate the club further and bring more stucture into the management of WCGA. The concept they developed was approved by the President Dr. Wolfram Nolte and Wharton External Affairs.

In September 2006, at the Wharton Oktoberfest Wolfram Nolte and his team passed on the WCGA leadership to the newly formed core team consist-

Save the Date!

The Wharton 125th Anniversary Economic Summit will take place April 12-14, 2007, in the Pennsylvania Convention Center, featuring top faculty, alumni, and industry leaders from around the world. **<125th.wharton.upenn.edu/summit>**

Reunion Weekend 2007 is set for Thursday, May 10 through Sunday, May 13, 2007.

Really like to plan ahead? Reunion Weekend 2008 will be Thursday, May 15 through Sunday, May 18, 2008. **<www.wharton.upenn.edu/alumni/reunion>**

ing of Jürgen Habichler (President), **Yin Yin**, W'05, WG'06 (Social Events and Communication), **Christian Mayer**, W'03 (Corporate Relations and Special Events), and various local leaders on a regional level.

The new team immediately started to implement some of the new ideas, building a new club website with the help of Wharton External Affairs **<www.whartonclub.eu>**, to serve as the "face to the alumni" and a communication platform both for internal (alumni, External Affairs) and external parties (firms, prospective students). This website includes contact information of the core team, pictures of our events, such as our Oktoberfest gathering, and our monthly newsletter with news and upcoming events.

The next priorities of the new management team include:

- Providing a professional networking platform among alumni, as well as implementing collaborative efforts with alumni associations of other prominent business schools such as INSEAD
- Organizing "fun, fun, fun": regular social events in epicenters Munich, Berlin, Frankfurt, Hamburg, Vienna, in addition to annual national events, i.e. Oktoberfest in Munich and Karneval (Mardi Gras) in Cologne
- Strengthening the communication between The Wharton School and our alumni base here
- Offering a first point of contact for prospective students in our region
- Creating a spirit around Wharton, further improving the Wharton branding in the German-speaking region, both among alumni and to external parties.

Wharton Club of Western Pennsylvania Welcomes Harrah's COO at Breakfast Briefing

One week after the Pennsylvania Gaming Control Board took the historic step of licensing the state's first gambling casinos, **Tim Wilmott**, WG'87, Chief Operating Officer of Harrah's Entertainment, briefed the Western Pennsylvania Wharton Club about Harrah's Entertainment's plans for the region. Speaking at a Wharton Breakfast Briefing, Tim, who oversees all of the revenue generating businesses at the $7.1 billion company, explained that Harrah's proposed casino and entertainment complex is planned to be an exciting destination that will draw gamblers and vacationers from West Virginia and Ohio as well as Western Pennsylvania.

Tim also described how Pittsburgh is expected to be a fresh and beautiful destination for Harrah's Total Rewards Customers across the country that can earn and redeem credits for their play at any one of Harrah's casinos worldwide.

Participants were impressed with Harrah's professional management. "Harrah's is a class outfit," said **Wesley Posvar**, WG'74. "It was an eye-opening experience to realize how much market research and data mining Harrah's does about its customers. It uses that information to implement targeted customer satisfaction programs."

Harrah's, the world's largest gaming and entertainment company, is one of three bidders for slots permits in Western Pennsylvania. (By the time you read this, the license winner will have been announced.) The plan put forth

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by Harrah's Entertainment and its partner, Forest City Enterprises, calls for more than $1 billion of investment in Pittsburgh's South Side. The plan expands Station Square into a new urban mixed-use residential and entertainment community.

Patricia Jablonski, WG'78, was interested in Tim's discussion of the politics involved in the plan development, "I found Tim's discussion of the dynamics of gaming versus the machinations of the Pennsylvania political process to be fascinating," she said.

Tim spoke in Pittsburgh to more than 50 alumni, on October 3, 2006, several days after Harrah's won the license for Harrah's Chester Casino and Racetrack at Chester Downs south of Philadelphia.

— Alexandra Hendrickson, WG'79

New York Club Revives Joseph Wharton Dinner

On September 28, 2006, the Wharton Club of New York reinstated a great tradition in grand style: the Joseph Wharton Dinner. Held in the Rainbow Room at Rockefeller Center, the awards were held for the first time in 15 years to coincide with Wharton's 125th anniversary.

This year's honorees were **Connie K. Duckworth**, WG'79, a retired managing director of Goldman Sachs, recognized for her work as founder of Arzu, a nonprofit group that employs and assists Afghan women; **Alvin V. Shoemaker**, W'60, H'95, former Chairman of the Board of First Boston, Inc., and of the First Boston Corporation; **Harold W. McGraw III**, WG'76; chairman and CEO of McGraw-Hill Companies; and **Josh Kopelman**, W'93, Managing Director of First Round Capital, a seed-stage venture fund and founder of Infonautics and Half.com.

"We're very excited to have the depth of volunteers in our Club to be able to take on the major task of relaunching The Joseph Wharton Dinner," **Kenny Beck**, W'87, president of the Club, said.

Geoffrey T. Boisi, WG'71, served as Honorary Chairman of the dinner. Boisi made his name in New York by becoming the youngest partner at Goldman Sachs in 1978. He was the founder and CEO of private equity firm The Beacon Group and former vice chairman and co-head of investment banking at J.P. Morgan Chase & Company. Currently he is senior partner at Roundtable Investment Partners. He is also Chairman and cofounder of MENTOR/The National Mentoring Partnership.

Aside from great networking, the chance to see old friends, the award ceremony, and a generous amount of time for dancing, the program included recognition of companies that employ the most Wharton alumni, recognition of alumni leadership, and acknowledgment of previous Joseph Wharton Award winners. Those past honorees include business luminaries **Reginald Jones,** W'39, former CEO of General Electric; **William S. Paley**, W'22, founder, chairman, and CEO of CBS; and **Lawrence Tisch**, W'43, former co-chairman of Loews Corp.

"It's our five-year plan to turn the Joseph Wharton Dinner into the Academy Awards for business in New York City," Beck said. ◆

WHARTON ALUMNI ASSOCIATION BOARD OF DIRECTORS

ALUMNI AFFAIRS AND ANNUAL GIVING

344 Vance Hall
3733 Spruce Street
Philadelphia, PA 19104
Phone: 215-898-0219
Fax: 215-898-2695
E-mail: alumni.affairs@wharton.upenn.edu

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Tama L. Smith, WG'90
President, Tama Smith and Associates, Inc.
Los Angeles, CA
Phone: 310-229-5951
E-mail: tsmith@tsassociates.com

PRESIDENT

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Chief Executive Officer, Corridor Capital LLC
Los Angeles, CA
Phone: 310-442-7001
E-mail: craig@corridorcap.com

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Managing Partner, Feldman Weinstein, LLP
New York, NY
Phone: 212-869-7000, ext.8700
E-mail: dfeldman@feldmanweinstein.com

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Leadership Spotlight

DR. SEHOON LEE, WG'75

Wharton had no active presence in South Korea until Dr. Sehoon Lee met with Wharton Alumni Affairs in the winter of 1988.

Inspired, Lee offered to gather alumni together, but pulling together a complete alumni mailing list was challenging. The HanGlas Group executive seized the initiative and bought an ad in the most prominent Korean business newspaper to invite all Wharton graduates to dinner. Seventy-five people — including the Minister of Trade and Industry and several CEOs of large Korean companies — showed up.

Based on the success of the first dinner, the alumni reactivated the Wharton Club of Korea. Lee served for more than 10 years as president of the club, raising Wharton's profile to the extent that Korea is the fourth-largest source of MBA students (after the U.S., China, and India). The Wharton Club of Korea now has more than 300 members.

Since that time, Lee has faced the issue of globalization from two perspectives. First, as CEO and president of HanGlas Group, he restructured the glass-making firm to allow his nationally dominant company to compete in the burgeoning Northeast Asian market. And second, as a charter member of the Wharton Executive Board for Asia, he has helped Wharton expand its global presence.

After graduating with a Wharton MBA and working at Citibank, Lee returned to South Korea as finance director for HanGlas Group, which had been co-founded by his father amid the devastation of the Korean War. At that time, the company had annual of sales of US$35 million. By 1995, Lee was the CEO, and HanGlas was a billion-dollar corporation.

Although the company was profitable, he believed it faced considerable risk. Its debt level was high, and it was facing competition from Chinese imports. He identified two core businesses — architectural and automotive glass — and decided to restructure, investing internationally in those core areas, and selling off HanGlas subsidiaries that manufactured other products.

The restructuring was completed in November 1997, and the financial crisis hit Korea by December. With a lean operation and negative debt, the company withstood the turmoil and even consolidated its position.

To further shore up its global competitiveness, in 1998 Lee expanded a business association with Saint-Gobain Group, a French-based glass and building materials giant, into a full strategic alliance. Lee has served as chairman since 2000.

Throughout his professional endeavors, Lee has continued his activities for the Wharton Executive Board for Asia. Since he reconnected with Wharton in 1988, he has created a scholarship program under the sponsorship of HanGlas Group for MBA students from emerging economies, including China, Colombia, and Russia. In 1999, Lee served as the Chairman of the Organizing Committee for the successful Wharton Global Alumni Forum held in Seoul.

He has been active in developing a culture of giving among his fellow Wharton alumni in Asia. Rather than waiting for decades to become involved, Lee encourages recent graduates to begin giving back in smaller sums immediately. During the last fund-raising campaign, Lee was the Chairman of the Development Committee of the Executive Board of Asia. Under his leadership, donations from Asian alumni grew exponentially and contributed materially to the success of the campaign.

In 1994 Lee received the Wharton Alumni Award for Distinguished Service, an award that has been given only 36 times in the history of the school. He has also been honored twice by the French government with the Chevalier and Officier de la Legion d'Honneur because of his work in promoting Franco-Korean business ties.

"My two years at Wharton meant a lot to me personally, and ever since I graduated, it has meant a lot in terms of my professional career," explains Lee. "My involvement is a small way of repaying my indebtedness to the school."◆

– KELLY J. ANDREWS