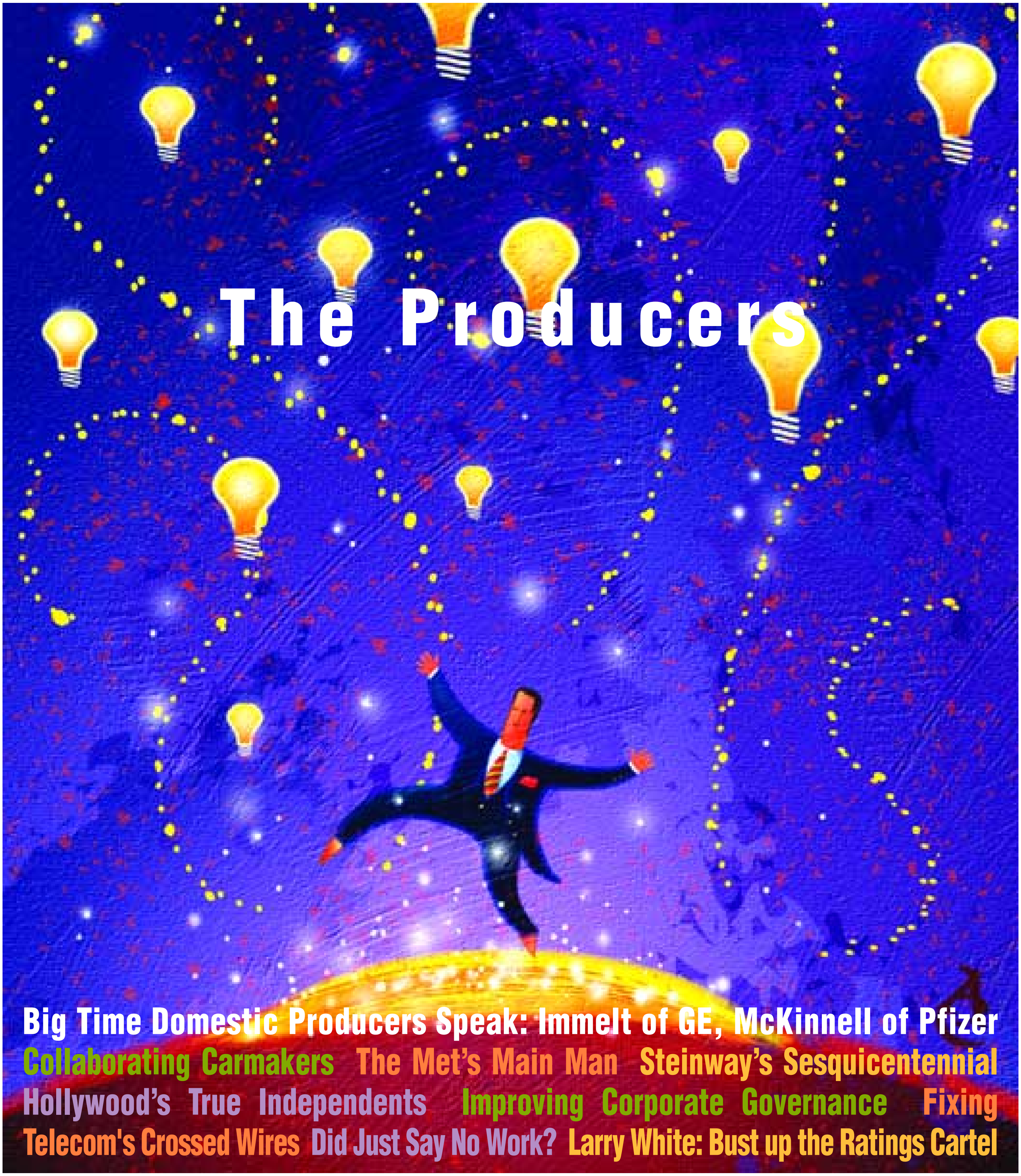
WINTER/FALL 2003

STERNbusiness



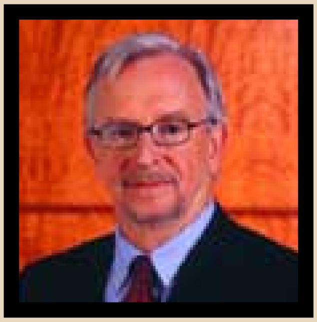
The Producers

Big Time Domestic Producers Speak: Immelt of GE, McKinnell of Pfizer

Collaborating Carmakers The Met's Main Man Steinway's Sesquicentennial

Hollywood's True Independents Improving Corporate Governance Fixing Telecom's Crossed Wires Did Just Say No Work? Larry White: Bust up the Ratings Cartel

a letter from the dean



Those of us engaged in teaching and scholarship generally shrink from thinking about our avocations in industrial terms. While colleges and schools may be said to "produce" graduates, the process of doing so is a highly interactive one that resists automation and standardization. In fact, producing graduates who are prepared to cope with rapidly shifting contexts is a less a process than a mission.

At Stern, we don't aim merely to endow our students with the ability to negotiate spreadsheets and cash-flow statements. Rather, we have long been concerned with preparing our students to negotiate the conflicts and challenges they'll face over the course of their careers. We strive to prepare students so they can think ethically, historically, and critically.

Amid the scandals and excesses of the last several years, fingers have occasionally been pointed at business schools. Shouldn't they be doing more to instill a sense of ethics in their students? Yes they should. For thirty years, Stern has offered as part of the required core a course on business ethics and professional responsibility. And we've been producing our own case study textbook on the topic for the past ten years. Professor Bruce Buchanan leads our robust markets, ethics and law program. Working with colleagues in other disciplines, NYU Stern professors have been crucial contributors to NYU's Center for Law and Business, which has taken a leadership role in educating directors of public corporations under Bill Allen's guidance. The lively symposium summarized in this issue is drawn from one of its events.

Assembling scores of directors and recruiting speakers such as Paul Volcker, Felix Rohatyn, and Richard Fuld is only possible, of course, because we're in New York. And our presence in the city that is both the world's financial and cultural capital allows us to offer our students a plethora of enrichment opportunities that go far beyond the traditional bounds of an MBA program. In this issue of STERN*business*, Professor David Liebeskind describes the history of local company Steinway, which students in his management consulting class have been using as a case study. And Vice Dean of MBA Programs and professor of management Richard Freedman recounts our highly successful and innovative interaction with the Metropolitan Opera. These stand as just two examples of how we strive to integrate the broadest possible range of disciplines into the Stern experience.

We hope you enjoy this production of STERN*business*.

Thomas F. Cooley

Thomas F. Cooley
Dean

contents

FALL/WINTER 2003 **The Producers**

STERN*business*

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Jeffrey Immelt

chief executive officer and chairman of the board

General Electric

Jeffrey Immelt is Chief Executive Officer and Chairman of the Board at General Electric (GE). GE operates in more than 100 countries and employs over 300,000 people worldwide, including more than 168,000 in the United States. With revenues of over $131 billion in 2002, the diversified conglomerate has the largest stock market capitalization among U.S. companies. Mr. Immelt joined GE in 1982, after having received a B.S. in applied mathematics from Dartmouth College and an MBA from Harvard University. Over the course of two decades, Mr. Immelt held senior positions in GE's appliances and plastics divisions before being named president and chairman-elect of GE in November 2000. Succeeding Jack Welch, he took office as GE's ninth chairman in the company's 125-year history on September 7, 2001.

ML: *How is business?*

JI: At GE, it feels like we're in the third year of the post-bubble economy. The consumer, because of lower interest rates, continues to spend money, to invest, and to refinance homes. But the 30 or 40 percent of the economy that's driven by industrial investment is terrible. There's too much capacity, too many airplanes, too many factories, too many computers in a number of industries around the world. I believe it's going to take some time for that part of the economy to fire on all cylinders again. And until that happens, we're not going to see the type of robust economic growth that we'd like to see in the U.S.

ML: *When do you expect this business recovery and what specifically will lead the economy back up?*

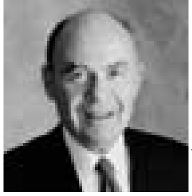
JI: If you saw what I got in college economics you wouldn't be asking me to do an economic forecast! There are two businesses I look at within GE. One is the plastics business. Plastics are sold everywhere. It goes into cars, computers, it's ubiquitous. In that business I see low, single digit volume growth versus last year. That's a good sign. And I look at our industrial business – we sell industrial controls in the factories – and that will tell you when companies start investing.

ML: *Tell us some of the broad thrusts of the changes you wish to make at GE.*

JI: I'm trying to prepare GE to grow in a slow-growth, deflationary, tough price pressure world. Number one, only those businesses that have technology advantages are going to survive. So our R&D spending is going to be up 12 or 13 percent this year, even in a tough economy. You also have to find ways to have ongoing revenue streams. If you look at health care, we sell equipment into hospitals, and we service that equipment, so in good times and bad we have a revenue stream. Third, the last decade was the decade of the finance manager, the next decade is going to be about marketing and sales. Fourth, think globally. If the U.S. economy is going to grow only three percent, that's not enough. So I'm trying to take the company to China. I want to go to Europe.

ML: *In light of the monumental scandals that have rocked corporate America, particularly in the last year, how has GE changed its corporate governance?*

JI: Your job as a corporate leader is to make your company perform and do it with integrity each and every day. You've got to have a strong and independent board.



Marshall Loeb, the former managing editor of *Money* and *Fortune*, conducts a regular series of conversations with today's leading chief executives on the Stern campus.

"If the U.S. economy is going to grow only three percent, that's not enough. So I'm trying to take the company to China."

Today, 11 of our 17 directors are independent. And the only directors we're going to appoint in the future are going to be independent. We have also totally aligned our directors with shareholders, so they have to take their compensation in deferred stock units. We've also changed executive compensation. I've got to have six times my salary in GE stock, and I've got to hold it for as long as I'm chairman. The top senior leaders also have to have large holdings of GE stock. If we cash stock options we have to hold it as stock for a year before we can turn it into cash. Finally, we're doing more disclosure: more investors meetings, longer annual reports. We have allowed investors to come inside the company and keep them there every day.

ML: *Do you think General Electric stock is fairly valued?*
JI: Well, Marshall, you've been doing this a long time, have you ever met a CEO that thought their stock was fairly valued? Last year, we had an incredible run up in the utility sector. Our power business went from making around $1 billion a year to a peak of almost $4 billion a year. And investors were skeptical in this environment as to what would replace those earnings. Second, for the first time we had to take a write-off because of our reinsurance business last year. When I look at those two things, I don't blame investors for taking the value of the company down. I don't like it. But if you were GE employees – 10 percent of the company is owned by GE employees – I'd say, you're not victims. We've got to demonstrate industrial growth outside the power bubble and we've got to take some of the volatility out of financial services.

ML: *What kinds of goods and services will offer us the greatest opportunity to sell to the Chinese? And what kinds of businesses are going to face the toughest competition from China?*
JI: The way to play in China is infrastructure. There's going to be a $300 billion investment in infrastructure in China between now and the Beijing Olympics in 2008. There are 50 airports being constructed right now. About 40 percent of all the new commercial jets sold in the next three years are going to China. On the sourcing side, my entire appliance business is uncompetitive today because of China. I can source an 18-cubic foot refrigerator in China with higher quality and lower costs than I can make it in Louisville, Kentucky. There's no doubt that China is going to take manufacturing jobs from the U.S. But, if I want to sell aircraft engines today, I've got to go to China. American Airlines isn't buying many planes these days. But China Southern is.

ML: *Huge conglomerates that have major stakes in many different kinds of businesses have fallen out of favor lately with investors. What has GE done to buck this trend?*
JI: What GE is today is really a function of being a 125 year-old company and being successful. We're in nine industrial businesses, four financial service businesses, but we've been in each of those businesses almost from the birth of the industry. I mean, we've been in the aircraft engines business for 100 years. We've been in the medical business for 85 years. We've been financing equipment since 1933. We've kind of grown as a multi-business company. But, we have one human resource system, one culture, one financial system. The reasons why you invest in GE today is because you think you're going to get superior growth through the cycles, you think you're going to get better cash flow, you think you're going to get more competitiveness. The only rational basis to have a multi-business company is based on performance.

"The only rational basis to have a multi-business company is based on performance."

ML: *How does it feel to succeed an icon like Jack Welch and what are the advantages and disadvantages?*
JI: The advantage is that he is a good friend and a good advisor. If I have a tough question about the company he's the guy I ask. I'm sure there are many times he disagrees with the things I do, but never in public. Inside our company change has always been viewed as a good thing. I got the job on September 7th of 2001. The world changed dramatically four days later. And the world has continued to change. Different leadership is going to be required. My job is to lead GE.

ML: *A lot of your businesses are lead by people in their 30's and 40's. Do you find that people at that relatively young age have got certain characteristics that older people don't?*
JI: I think what we've done over time is give people at a very early age a number of different experiences so that they're prepared to run big businesses by the time they are in their 30's and 40's. The advantage that we have in our company is we've got great jobs. By the time you're 35 you get a chance to run a $1 billion dollar profit and loss, you get a chance to have assignments in China or

continued, page 6

Hank McKinnell

chairman and chief executive officer

Pfizer Inc

Hank McKinnell is Chairman and CEO of Pfizer Inc, the world's largest research-based pharmaceutical company. With 120,000 employees – including 97 Stern alumni – Pfizer had 2002 revenues of $32.4 billion and a research and development budget of $5.3 billion. Familiar Pfizer products include the prescription drugs Celebrex, Lipitor, Viagra, and Zoloft, and over-the-counter products like Benadryl, Listerine, and Lubriderm. McKinnell, a graduate of the University of British Columbia, holds an MBA and PhD from the Stanford University Graduate School of Business. McKinnell joined Pfizer in 1971 in Tokyo. In his 32 years at the company, which traces its origins to 1849, McKinnell has served as President of Pfizer Asia, Chief Financial Officer, and President of Pfizer's Global Pharmaceuticals group. He was named Chairman and Chief Executive Officer in 2001.

ML: *What do you see when you look out at the US economy and the global economy?*
HM: At this point in the economic cycle, coming out of a recession, the economy has the capacity to grow at something like three to five percent without triggering inflation. It looks like we may be growing at one or two percent. So, I think there needs to be additional stimulus short term. Ending the double taxation of dividends is just the beginning. We need a larger agenda to really get into some of the complexity of the tax code and make it more growth friendly.

ML: *Why are identical pharmaceuticals so much less expensive in Canada than they are in the United States?*
HM: First, in Canada, pharmaceutical companies don't set prices, the government does. Second, while there are no research-based pharmaceutical companies in Canada there are generic companies. So, it's no coincidence that Canada sets very low prices for patented products while setting extraordinarily high prices for generics once the patent expires. Generic prices in Canada are 60 to 70 percent higher than those in the United States.

ML: *Just about every national political leader has come out with a program to provide pharmaceuticals inexpensively to older Americans. What's your program?*
HM: I don't have a program. I can only urge that Americans work to give all citizens greater access to better healthcare. The greatest step we can take right now is to include a good quality prescription drug benefit as part of Medicare. As we, as a society, debate the scope and shape of such a plan, we should remember that America's pharmaceutical industry is the most innovative in the world, and take steps to make certain that level of innovation can be sustained. Clearly, though, we as a society can do more to make certain that people in need can get the medicine they need.

ML: *In the last 50 years, life expectancy in the U.S. has gone up about 20 years. That's a dramatic leap forward.*
HM: Everybody in this audience has a really good chance of living into their eighties. That's the good news. The bad news is, 50 percent of those in their eighties are suffering from Alzheimer's disease. As a society, we have a choice. Either we spend tens of billions of dollars to construct long-term care facilities, and find the people to take the low-wage

jobs to work in these facilities, or we continue to provide the incentives, through free market pricing, and good intellectual property protection, so that my industry has at least a chance of discovering drugs that will improve the quality of life of people suffering from Alzheimer's. And then you have to survive the approximately $800 million and ten to twelve years it takes a drug to go from discovery through to the patient.

ML: *Pfizer spends more on research and development than any other pharmaceutical company in the world. What are your primary targets now, and what breakthroughs are you hoping for?*

HM: We're spending one hundred million dollars a week on research and development. That is the investment in the future. Whenever we introduce a new product, ten years later the patent is gone, and the income from that product goes to zero. If we don't re-invent ourselves every 10 years or so, we go out of business. There is a lot of research going on, both within the industry and within Pfizer, in areas like oncology, central nervous system disorders and cardiovascular diseases. The area that concerns me the most is the area of anti-infectives. We thought we had cured infectious disease back in the 1940s with penicillin. Turns out these little bacteria are a lot smarter than any of us. As we see with the SARS outbreak in Asia, these organisms are able to mutate away from the currently available products. And, in the last decade, four or five major pharmaceutical companies have dropped out of anti-infective research, in part because they were concerned that there weren't going to be the incentives for that research.

ML: *Tell us about Pfizer's contributions to Makerere University in Uganda that will focus on AIDS and HIV care and training.*

HM: About five years ago, the accepted thinking was that the reason those with HIV infection in Africa weren't getting access to the drugs they needed was the pharmaceutical companies and their patents and their high prices. It was nonsense, because there are no patents in sub-Saharan Africa. The problem was lack of representative government, corruption, lack of medical infrastructure. People were dying because they didn't have the knowledge to protect themselves. This is the medical crisis of our generation. I've learned through my career, that where local government and UN and private companies can't solve problems alone, together they usually can. So, we started with trachoma, the world's leading cause of preventable blindness. We happen to have a drug, a very convenient once a day treatment, which can eliminate this infection. We're partnering with the World Health Organization (WHO) and governments in Africa. In some regions we've taken infection rates down by 50, even 75 percent. In a year or so, we can actually eliminate blinding trachoma.

My thought was the same approach would work with HIV/AIDS. We started with Diflucan, an anti-fungal for serious systemic fungal infections in AIDS patients. We made it available free of charge, provided training to health care professionals, and provided secure distribution. So far, we have distributed over three million doses, and trained over 11,000 health care professionals, and we're now rolling this program out from South Africa to more than 20 countries in sub-Saharan Africa, and 50 low income countries around the world. The major issue we're trying to address at Makerere University, the medical school in Uganda, is medical infrastructure. We're building a clinic. Our vision is that we will train 100 specialists each year, who in turn will return to their districts in Uganda, and countries elsewhere in sub-Saharan Africa, and train thousands, and they in turn will care for and treat millions every year.

"As a nation, we spend almost as much on prescription medicines as we do on automobile accident repair. But, of course, we're all insured for automobile accident repair."

ML: *You acquired Warner Lambert in 2000, and now you've acquired Pharmacia. Do you see other large mergers ahead for Pfizer?*

HM: I don't see any mergers ahead for Pfizer. If you track our strategy over the past 15 years or so, in the early 1990s we were very busy launching a number of very important products that came out of our own research. The Warner Lambert partnership was based on Lipitor, now the world's largest selling drug. The discussions with Pharmacia were sparked by a very important drug, Celebrex, for the treatment of rheumatoid arthritis and osteoarthritis. We knew that we could do things together that we couldn't do separately.

ML: *How does the Pharmacia merger strengthen Pfizer?*

HM: The combination of Pharmacia and Pfizer creates a stronger company in a couple of ways. Pfizer has always been a very strong general practitioner, or family doctor company. Pharmacia, historically, has been much more targeted. They brought to us businesses and relationships in oncology, endocrinology, and ophthalmology. So, in a very real sense, the combination makes Pharmacia a better general practitioner company, and they do have a potentially significant cardiovascular drug

continued, page 6

continued from page 3

Europe or elsewhere around the world.

ML: *What characteristics does GE look for when hiring people?*
JI: We like people who have an absolute thirst for learning and the capability to perform. We like people that know how to work in teams and know how to energize diverse groups of people. And we want people who know how to teach, know how to give back, and know how to make contributions.

STUDENT QUESTIONS
Q: *What do you think are the major difficulties that women face in entering the business world?*
JI: Companies that don't have an environment that is friendly to everybody aren't going to get the best people. If you look at our top 600 people, about 22 percent are women. That's probably double what it was as recently as five years ago. We have tried to give women more personal flexibility inside the company, to make life choices that they want to make and still not have to give up the career path they're on. I believe that women can do any job in this company.

"Don't believe that you're going to spend 20 years at McKinsey and get my job. If you want to be a CEO of a company, go join a company."

ML: *Any other advice you would give to someone who is graduating with an MBA?*
JI: The best advice I can give you is know in your heart what you want to do and go in as direct a line as possible to get that done. Don't believe that you're going to spend 20 years at McKinsey and get my job. If you want to be a CEO of a company, go join a company. If you want to be an investment banker, go be an investment banker. But don't sit here and think that you can go spend three years here and three years there. Get deep in something. I'm not here to say one path is better than the other, but pick one and be totally dedicated to it.

Q: *Do individual investors have any business owning GE?*
JI: Our stock is held about 50 percent by institutions, 10 percent by employees, and 40 percent by individual investors. We are the most broadly held stock in the world. In some ways, our size and diversity help buffer individual investors from some of the volatility that exists in the world. If you want to make a core investment, a five or ten-year investment, this is the best company in the world. It gives you more consistent returns, and I think that's what individual investors like.

Q: *How do you communicate with all your employees?*
JI: I'm an avid IT user. One thing that I do three or four times each year is an all-employee webcast. It gives me a chance to get the message out in a pretty consistent way and they can see a face. I do a lot of one-on-one. It's absolutely critical. When you're running a company with 300,000 people, every one of them needs to think that you can enter their life any day. They need to believe that you could be on e-mail to them, that you could walk through the door, that they could see you in a meeting. You have to use every information tool at your disposal to make that happen.

Q: *Is there a particular business that you're not in today that you'd like to be in over the next decade?*
JI: There are some advanced technologies I like. I like molecular imaging, I like hydrogen fuel cells, I like nano-technology and advanced propulsion technology. But the bubble-less market of our lifetime is health care. There's going to be a massive amount more spent on health care in the future than there is right now.

Q: *What is it about business that you find intriguing?*
JI: I am one of those people that absolutely hit the jackpot because I learn every minute of every day. My argument for business is that if you like to learn and you like people, this is the field that you want to be in. And the fact is, business is a great force for change. I'm an undying globalist. I really believe that as the economies come together you get more understanding. ■

continued from page 5

in the late stage regulatory process. That clearly will have more value in Pfizer's hands than it would have in Pharmacia's. And, similarly, the work that we're doing in ophthalmology, and the major oncology research that we have under way, has more value in the Pharmacia oncology business than it would if we had to create one of those businesses.

ML: *Could you go down the list of some of the major medical problems and tell us in what areas we're making progress and in what areas we're frustrated?*
HM: Well, the two big killers, the things that all of us should be worried about are cancer and heart disease. There have been remarkable improvements in recovery rates from cancer and from heart disease. My view is that progress will continue. It will be sporadic. There will be big new products, and there will be smaller products. Also, the whole area of CNS, central nervous system disorders, from depression to schizophrenia to anxiety, is promising.

"We've got 20 products that we think will be in registration over the next five years. That's a record in this industry and nobody else can even come close to it."

ML: *What is your advice to students graduating this year with an MBA?*
HM: I think of careers in terms of three levels of leadership. When you graduate, you will join an organization, and probably be evaluated based on your own activity. I call this the first phase of leadership, and that's individual responsibility and individual contribution. Very quickly you will be promoted to a first-line supervisory position. Those of you who will succeed recognize that you're going to be evaluated based on achieving results through others. Now you get into, not a management issue, but a leadership issue. The one thing you need to start thinking about, maybe five years into your career, is leadership style. In the mid-1990s, I was given responsibility for both our U.S. and international business. We'd always run them as separate, competing organizations. I decided to distract people from their internal warfare and set them a goal that they had to work on together. The goal was to be the number one pharmaceutical company in 2001. We did it in 1999, and again in 2000. The hardest thing, as a manager, was to convince people that it was achievable. I trusted the organization to get us there. And, we got there two years early.

STUDENT QUESTIONS

Q: *What's your strategy for developing your brand?*
HM: Well, I don't think of direct to consumer advertising in terms of branding. I think of direct to consumer advertising in terms of consumer health information. There's a more informed discussion between the doctor and patient when the patient comes in reasonably educated about what an allergy is, and what drugs might be available to treat it. What it really does is grows the market and brings people into the doctor's office.

Q: *After the merger with Pharmacia, your projected annual revenues will be around $50 billion, making you 50 percent larger than your nearest competitor. What impact do you think will this have on the competitive landscape?*
HM: I don't really believe that bigger is better. You grow by investing in research and innovating, and selling the hell out of your inline products, and licensing where you can. So, that problem is really not any different at $50 billion company than it is at a $5 billion. There are some places where scale does matter. Purchasing is a good example. We'll be the biggest purchaser of pharmaceutical, medical research services and products, and manufacturing raw materials of any other company in the industry. So, these suppliers will return our phone calls, and we probably will get the best prices. That's probably worth about a billion dollars a year to us. Where you worry about scale is in research. We're working really hard to make sure our researchers have scientific flexibility, that they don't feel constrained by the bureaucracy. So far, the results are good. We've got 20 products that we think will be in registration over the next five years. That's a record in this industry and nobody else can even come close to it.

Q: *To what extent do you think that a Medicare prescription drug benefit is a slippery slope to the government setting prescription prices in this country?*
HM: If the government administers the benefit, it is very much a risk. We're working hard to achieve a government benefit administered through the private sector, so there is competition and patients have choice.

Q: *Many mergers do not work because of a failure to integrate the corporate cultures. How are you going to integrate the management of Pharmacia?*
HM: Pfizer is, at its core, an exceptional operationally effective company. And, we approached the integration of Warner Lambert the same way we approach everything else, with a very detailed planning, rapid implementation approach. It was very successful, and we found that the cultures weren't that different. One of the lessons we learned from that merger was that, even though we did the integration in record time, if we ever do it again, we should do it even faster. We've taken the play book from the very successful Warner Lambert integration, applied it with some modification to the Pharmacia organization. Everybody will know their status, position, and boss on the first day. ■

"There have been remarkable improvements in recovery rates from cancer and from heart disease. My view is that progress will continue."

P r o d u c t i o n

One hundred years after Henry Ford founded the car company that bears his name, auto manufacturing is still an immense force in the U.S. economy. Last year, Americans bought 16.8 million cars, and the Model T's progeny accounted for a significant chunk of U.S. retail sales. But while Detroit is still justly referred to as Motown, the auto industry is far more decentralized and global than it was in Henry Ford's day. And present-day automakers would never try to mimic Ford's efforts at vertical integration. There's too much money to be saved – and too much to be learned – by working cooperatively with suppliers. In their article, "Supply Chains," (p. 16) Masaaki Kotabe, Xavier Martin, and Hiroshi Domoto study relationships between U.S. and Japanese automakers and their respective suppliers, and help us understand how they can do a better job.

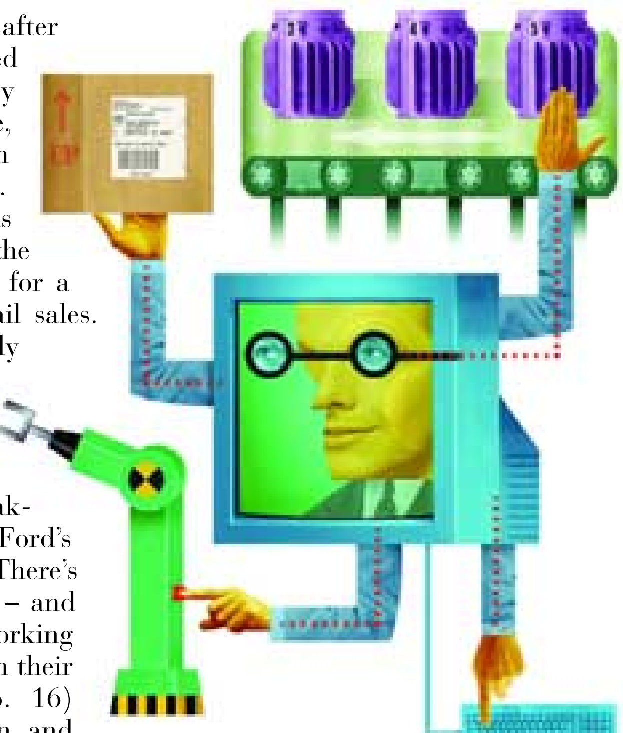


ILLUSTRATION BY GORDON STUDER

Cars may be the largest mass-produced consumer items. Some of the products made by pharmaceutical companies – i.e. pills – may be the smallest. And yet it adds up to a big business. The drug industry today is at root a manufacturing process – scientists and engineers figure out ways to turn chemicals and other elements into pills, liquids, serums, and gels. But making drugs successfully also involves basic scientific research, knowledge of genetics, the ability to negotiate political and regulatory minefields – and a desire for constant regeneration. "Whenever we introduce a new product, 10 years later the patent is gone, and the income from that product goes to zero," said Pfizer Inc Chairman and CEO Hank McKinnell, who appeared as part of Stern's CEO series (p. 4). "If we don't re-invent ourselves every 10 years or so, we go out of business."

General Electric, the largest U.S. manufacturer, has been in business for more than a century. And it still makes some of the same things it did in the early part of the 20th century, like light bulbs. But over the decades, it has evolved into a manufacturer par excellence of jet engines and power turbines, plastics and CAT-scan machines. This gives the company – and its Chairman and CEO, Jeffrey Immelt – an early look at whether the industrial sector is finally turning around. "Plastics is sold everywhere," he said. "It goes into cars, computers, it's ubiquitous. In that business I see low, single-digit volume growth versus last year, and that's a good sign."

GE also owns the television network NBC, which makes it a producer in the Hollywood sense as well as a producer in the manufacturing sense. Of course, producing entertainment is more of an art than a science. But in "Independents' Day," (p. 24), Al Lieberman makes the case that independent producers are really entrepreneurial managers. "Producers don't have to possess any of the skills necessary to make film," he writes. "They don't have to write, direct, act, compose music, or design costumes and sets. Instead, a producer must figure out how to get people who are the best at their crafts to do even better."

One of the biggest challenges a movie producer faces is managing high-maintenance personalities. But just think of the difficulties managers of opera companies must cope with on a daily basis. After all, this is the place where we get terms such as prima donna and diva. "The management problems in a large opera house are highly analogous to the problems faced in the most complex business organizations," said Vice Dean Richard Freedman, who for

Values

By **Daniel Gross**

several years has been leading students in intensive encounters with the Metropolitan Opera and its director, Joseph Volpe (p. 22). "Something like this can only be done on this scale in New York City."

The marriage of art, manufacturing, and commerce is seen in another New York institution – Steinway. With a factory in Queens and a showroom in midtown – just a few blocks from Lincoln Center and the Met – Steinway has not only defied the odds, but maintained its position at the top of the piano business by making its products meticulously – and by hand. In his article, "The Keys To Success," (p. 10) David Liebeskind describes how the company has "perfected the 88-keyed instrument to the point where the company's name and the word piano are almost synonymous."

Shrewd marketing and advertising campaigns are most frequently associated with consumer products like Steinway pianos. But the anti-drug advertisements run by the Partnership for a Drug-Free America ("Just Saying No," p. 28) provide an example of a highly effective ad campaign geared at a social ill. "Our model, based on survey data from 1987 to 1990, indicates that increases in amounts of anti-drug advertising are associated with decreases in teenage drug use," write Lauren G. Block, Vicki G. Morwitz, William P. Putsis, Jr, and Subrata K. Sen. The money committed to the ads, the authors conclude, "appears to have been a worthwhile investment."

Steinway has lasted for 150 years not just because it makes a good product, but because it has good management. In recent years, time and again, companies with lengthy histories and dominant market shares have been undone by poor corporate governance. Last spring, a distinguished panel convened at Stern to discuss the problems ("Governing Principles," p. 36). Moderated by Dean Thomas Cooley, the panel included former Federal Reserve Chairman Paul Volcker, longtime investment banker Felix Rohatyn, and Richard Fuld, a Stern alumnus and the current Chairman and CEO of Lehman Brothers. "I think all our failures of corporate governance – and they are clear, and they are not limited to a handful of people – are representative of a wider malaise," said Volcker, who nonetheless expressed optimism that investor confidence would return.

Recent reforms may have addressed some of the weak spots in the system that had layered and built up over time. But Larry White ("The Bond-Rating Game," p. 32) identifies one area that has thus far escaped regulatory attention: the ratings cartel. "In essence," he writes, "the SEC has given the incumbents a captive audience: the entire U.S. bond market."

For much of the past century, telecommunications companies had a captive audience for their services. But in the past two decades, consumers have benefitted from some of the deregulatory initiatives that helped spur hundreds of new companies to enter the field. In his article, "Dial 'C' for Competition," (p. 40) Prof. Nicholas Economides assesses the incomplete revolution in telecommunications.

"But there is one sector that combines industrial processes and information-age disciplines, that involves production in the media sense and physical production. Magazines."

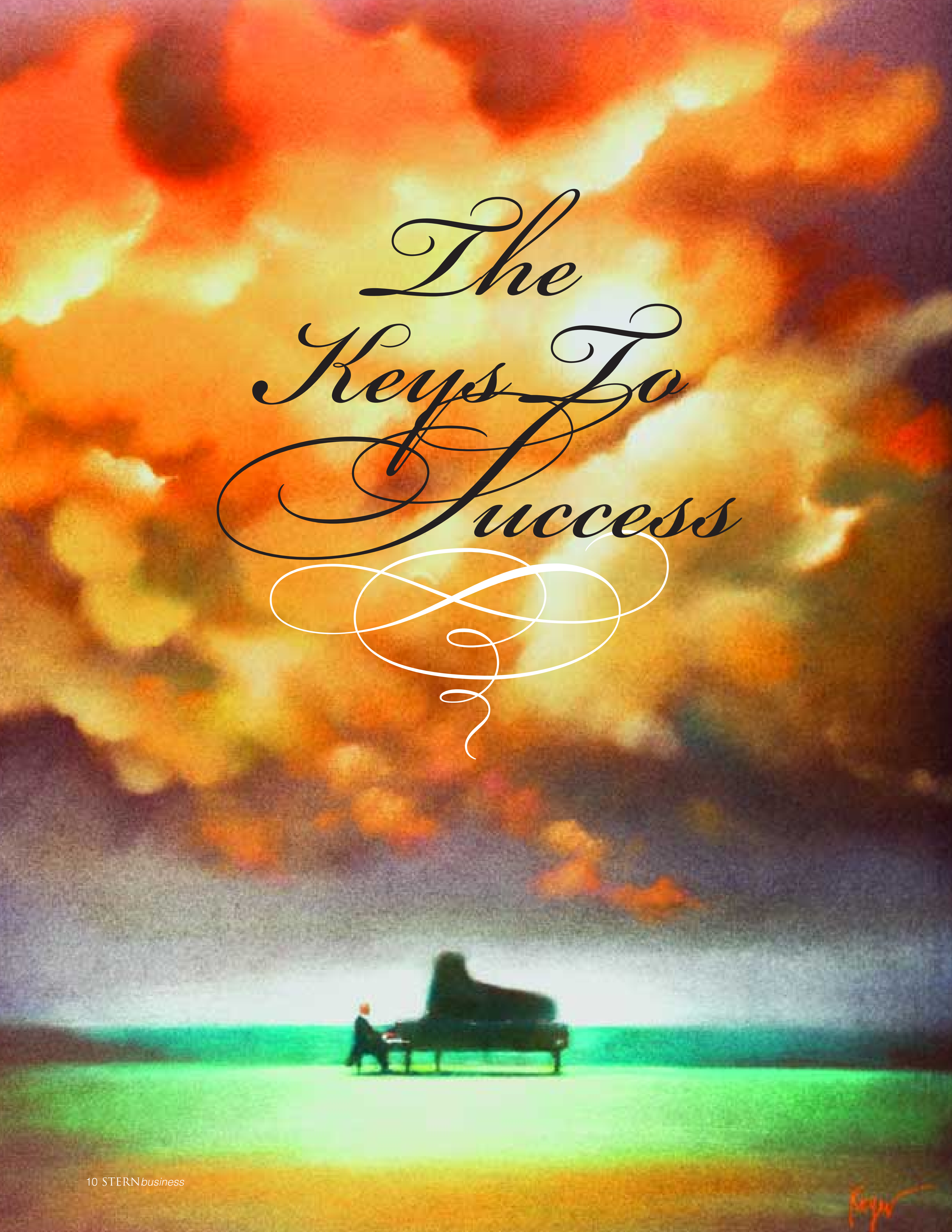
Producing bonds, or producing telecommunication systems is far more abstract than making light bulbs or cars. In these spheres, technology, communications and numbers are the products.

But there is one sector that combines industrial processes and information-age disciplines, that involves production in the media sense and physical production. Magazines. The raw materials – the texts of the articles – are composed of information. And they are processed and improved by the efforts of editors and designers – who work almost exclusively on computers. Ultimately, the package is sent off to a plant for final production, and then moves through a distribution chain to its ultimate consumers. There's a sense of old-world pride associated with this 21st-century process.

No person involved in the production of this issue of STERN*business* will find his or her fingers stained with ink at the end of the day. But we all find it remarkably satisfying to hold an attractive, solid, and engaging final product in our hands.

DANIEL GROSS *is editor of* STERN*business.*

The Keys To Success



For 150 years, Steinway & Sons has set the standard for the quality manufacture of pianos. The secret to its longevity: a mix of old-world craftsmanship and modern-day management techniques.

By **David Liebeskind**

On March 5, 2003 the venerable pianomaker Steinway & Sons celebrated its 150th anniversary. To mark the occasion, the company introduced a limited edition grand piano model designed by Karl Lagerfeld and a recreated version of the Steinway that had been played by Polish virtuoso Ignace Jan Paderewski in 1891. In early June, a series of three concerts at Carnegie Hall, featuring artists ranging from Van Cliburn to Art Garfunkel, paid homage to what has been the instrument of choice for generations of professional musicians.

Steinway didn't invent the piano. But it certainly perfected the 88-keyed instrument to the point where the company's name and the word piano are almost synonymous. Working a long-term – 150 years and still going – technical and marketing strategy that emphasized quality, the New York-based company has convinced the music world that a piano should simply sound like a Steinway. The Steinway sound is to the piano what the Harley Davidson sound is to the "true" motorcycle. And today, the piano of Paderewski, Rachmaninoff, Rubinstein, and Horowitz is the piano of over 1,300 contemporary concert artists – and the standard that competitors strive to mimic.

How did this company, which has been the subject of my management consulting class's case study for the past two years, gain such prominence? And more important, how did it maintain its competitive advantage in the face of Depression and myriad competitors? In a word, strategy. Ever since the first Steinway family members arrived in New York from Germany in the middle of the 19th century, the company has pursued a strategy of making high-end, quality products, selling them through its own sumptuous outlets and through a network of dealers, and gaining exposure by encouraging premier performing artists to use the pianos.

Coming to America

Steinway's founder, Heinrich Engelhard Steinweg, was born in Wolfshagen, Lower Saxony in 1797. At age 15 he found himself the sole survivor of a family of twelve children. At the age of 18, he was a soldier in the Prussian army at the epic battle of Waterloo. Leaving military service at age 21 – and hence too old for a traditional apprenticeship – he served as an apprentice with a church organ builder. After making a number of organs, he took an interest in pianos. He learned how to make his first piano in Seeson, Germany, from Karl Brand, the son of the local synagogue's cantor.

Steinweg entered the piano-making business in 1839. By 1848, he had produced about 400 units and was considered to be a prosperous man. However, the famines and the failed revolution of 1848 convinced him and many Germans that life might be better in America. And in June 1849, he sent his son Charles to New York.

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In New York, Charles had no trouble finding work with the piano maker Bacon & Raven. The city was the center of the U.S. piano industry, and business was booming. Receiving favorable word, Heinrich sold his house in the spring of 1850 and journeyed to America with his three daughters, five sons and wife. The oldest son, Theodor remained in Germany. Arriving in New York, Heinrich, now called Henry E. Steinway, took a job making soundboards at piano maker Leuchte for $6 per week. The wages were well below what Charles was making and even less than the $10 per week that barbers were earning. But as a non-English speaker, Henry didn't have many choices.

On March 5, 1853, Henry and three sons – William, Charles, and Henry, Jr. – launched Steinway & Sons with a total investment of $6,000. It was a true family business. Henry was the titular head of the business, William worked as a "bellyman," installing soundboards, Charles focused on tuning and "voicing," and Henry Jr. on finishing. Henry's daughters helped in the selling activities. From their shop in a rented building in Lower Manhattan's Varick Street, they made and sold eleven pianos the first year. In 1854, they moved to larger quarters on Walker Street.

The pianos quickly gained attention. In 1854 a Steinway piano won a prize at The Metropolitan Mechanics Institute Fair in Washington. The following year, at the American Institute Exhibition in New York, Henry Jr.'s new model design was deemed to be the best piano at the exhibit.

Growing into a Large Business

In the 19th century, piano-making was generally a small-scale business. In 1863, some 400 workers made 1623 pianos. But most manufacturers couldn't match Steinway's quality and sold into the lower end of the market. By pursuing the high-end, Steinway quickly evolved into a significant business. In 1860, just seven years after the company's founding, the Steinway family enjoyed an elaborate dinner to celebrate the opening of a new factory on Manhattan's Park Avenue – just across from where the current Waldorf Astoria Hotel now stands. The new factory employed about 350 workers and was the largest piano factory in the world. Four years later, the Steinways opened a showroom on 14th Street in Manhattan. In 1865, sales topped $1 million.

Almost from the start, Steinway pioneered in piano technology. Between 1857 and 1900, it was awarded 58 patents for innovations in piano design. In 1859, Steinway introduced the first overstrung grand and by the 1870s, their basic design for grands – which used a cast iron frame, heavier strings and a single sound board – became the industry standard. The new design produced a much more intense sound, far better suited for the larger concert halls that were replacing smaller venues used for chamber music. The new design was referred to as the Steinway System, or as the American System.

In part to avoid union conflicts, the company in

STEINWAY TIMELINE

150 Years of Piano-Making

1839 – Steinway founder Heinrich Engelhad Steinweg enters the piano-making business in Germany.

1849 – Charles Steinweg, a son of Heinrich, immigrates to New York, soon to be followed by other family members.

1853 – Heinrich Steinweg (now Henry Steinway) forms Steinway & Sons in Lower Manhattan.

1865 – Steinway records $1 million in sales.

1875 – Steinway earns patent for the design of a grand piano.

1896 – William Steinway, a son of Henry Steinway who had run the company for 20 years, dies and is succeeded by his nephew Charles H. Steinway.

1900 – Steinway advertising campaign developed by N.W. Ayer & Sons commences.

1909 – Steinway opens retail outlet in Berlin.

1919 – Charles Steinway dies and is succeeded by his brother, Fred.

1925 – Steinway builds new showroom – Steinway Hall – on W. 57th St.

1927 – Theodore E. Steinway assumes control of the company.

1953 – Steinway marks 100th anniversary with gala concert at Carnegia Hall.

1972 – Family control ends as CBS purchases the company.

1985 – John and Robert Birmingham purchase the company from CBS.

1992 – Boston line of pianos introduced.

the 1870s purchased 400 acres of farmland in the Astoria section of Queens, just across the East River from Manhattan. And within three years, the site housed a functioning factory along with company-sponsored housing and transportation for employees. The company expanded internationally, too. In 1875, a showroom in London was added, and in 1880, Steinway built a factory in Hamburg, Germany to serve the European market.

Marketing a Sound

Marketing was also part of the strategy. Since at least the time of Beethoven, concert artists had endorsed pianos. Early on, William Steinway, the marketing genius of the firm, who would become president of the company in 1876, recognized the need for endorsements. According to author Cyril Ehrlich, he categorized his targets into three interconnected groups: "the aristocracy and *haute bougeoisie*, eminent musicians and habitués of artist salons, and not least, the new emporia of international commerce, the great exhibitors." In the 1860s and 1870s, William managed to gain the patronage of the Baronese de Rothschild, the Empress of Russia, the Sultan of Turkey, and Queen Victoria. In 1872, Steinway sponsored a 215-city concert tour in the U.S. by the Russian virtuoso Anton Rubinstein. And by 1876, William could claim that 94 eminent artists were using – or preferred to perform on – Steinways. The list included such names as Richard Wagner, Louis-Hector Berlioz, and Anton Rubinstein. Of course, endorsements weren't always exclusive. Franz Liszt, the pianist and composer, endorsed Steinway – and at least six other piano manufacturers.

Starting in 1855, Steinway was the only piano maker to advertise daily in *The New York Times* and in the 1870s and 1880s was one of only a handful of manufacturers advertising regularly in national publications. But the efforts shifted into another gear in 1900, when Steinway started to work with N.W. Ayer & Sons, one of the first full-service advertising agency in the U.S.

"Of course, endorsements weren't always exclusive. Franz Liszt, the pianist and composer, endorsed Steinway – and at least six other piano manufacturers."

Ayer noted that since Steinway's in-house program was only geared toward those already interested in music, the company was neglecting millions of other potential customers who could develop a taste for it. Steinway agreed to hire Ayer, so long as the agency's work would not damage the company's well-guarded image. Ayer's efforts worked well and the partnership lasted until 1969, the longest in the ad business. The company also received free advertising, as when Irving Berlin penned the line "I know a fine way to treat a Steinway" for his 1915 hit "I Love a Piano."

Leadership and Ownership Transitions

When William Steinway died on November 30, 1896, the reins of the company fell to his nephew Charles H. Steinway. Charles led the company through a difficult financial period in the late 1890s by finding new markets and adding to the firm's production capacity. Charles ran the company until his death in 1919, and then his brother Fred became chief executive. Fred, who had lived in Germany until 1878, was somewhat more formal than his cousins. Under his leadership, Steinway in 1925 moved its New York showroom from 14th Street to the now famous Steinway Hall on West 57th Street. In 1927, after Fred's death, Theodore E. Steinway took over. Theodore was somewhat reluctant to take control, as he was somewhat shy and had a bit of a stammer as a boy. But he ran the company until 1955, when his son Henry Z. Steinway took over.

Like many other manufacturers, Steinway struggled during the Great Depression and World War II, during which production was suspended – with the exception of about 3,000 olive drab pianos for the military. Normal piano production would resume in 1946. And in 1953, to celebrate its centennial, a special concert was given at New York's Carnegie Hall which featured ten pianists playing Chopin's Polonaise in A Major.

In the early 1970s, much as it had a century before, Steinway encountered competition from low-cost producers – this time based in Japan. While Steinway's fine image and reputation was unquestioned, the business wasn't particularly profitable amid the challenging economic climate. The cousins who held stock in the company fell into two categories. Those involved in the business derived a great deal of psychic income from running the business, but the others were mainly interested in the return on their investment and pressured Henry Z. Steinway, the then-president, to act. So in 1972, more than a century of family control came to an end when Henry sold the company to CBS. CBS pumped some badly needed funds into the operation but eventually recognized that the business didn't fit its corporate strategy.

In 1985, CBS sold the company to John and Robert Birmingham, Boston-based investors. The Birminghams brought in Bruce

Stevens as president. Under Stevens, a veteran businessman, Steinway returned to its former stature, stressing quality and focusing on the high-end market. Ten years later, the Birminghams sold Steinway to two investors, Kyle Kirkland and Dana Messina, who today control 84 percent of the voting stock. Kirkland and Messina then merged the company with Selmer, a manufacturer of musical instruments. The stock is listed on the New York Stock Exchange under the symbol LVB, honoring Ludwig von Beethoven.

The new ownership retained Stevens as president. And with a series of successes in marketing, Stevens has maintained the strategy of differentiation and aggressively protecting Steinway's high-end market share.

Elements of Strategy

Steinway today uses a multipronged strategy, whose elements include unparalleled quality, a strong focus on the market's high end, a comprehensive restoration program, an art case and limited edition program, the All Steinway School Program, a strong dealer network, a concert and artists program, and a highly skilled work force. While each individual element potentially can be copied, together they constitute a formidable defense against potential challengers. In many cases the individual elements work to reinforce each other.

Quality was and remains the keystone of the Steinway strategy. The company's mission, as stated by its founder was to "Build the best piano possible." Essentially, it is the same today, as Steinway brings the modern techniques of quality management to old world craftsmanship. Every piano that goes through the tuning and "voicing" department is worked on by a highly skilled technician for as long as a day before it can be called a Steinway. The company uses Statistical Process Control analysis in those departments whose parts have exceptionally close tolerance limits, and conducts quarterly analysis and evaluations of all scrap, yield, and rework data. And with the direct role played by top manage-

"Quality was and remains the keystone of the Steinway strategy. . . With the direct role played by top management, the overall program at Steinway is a true total quality management (TQM) program."

ment, the overall program at Steinway is a true total quality management (TQM) program.

Focus On the High-End of the Market

Yamaha enjoys a far greater share of the overall piano market than Steinway and even makes concert grands that sell for as much as a Steinway. (Small Steinway grand pianos range from $36,000 to $54,000 while a full-sized concert grand piano retails for $93,000.) Yet Steinway enjoys 98 percent of the concert grand market. And while Steinway has only about 2.5 percent of all keyboard retailers in the U.S., these retailers represent approximately 23 percent of the total industry sales dollars and about 35 percent of the profits. Steinway sells 85 percent of its pianos through it 170 dealers, 70 of which are in the U.S., with the remaining sales coming from company-owned retail locations, including Steinway Hall.

Steinway sought to protect its high-end image as it introduced its lower-end Boston and Essex lines, introduced in 1992 and 2001, respectively. The Boston piano is a mid-priced instrument made by Kawai in Japan to Steinway specifications. The Essex is a lower-priced piano made for Steinway by Young Chang in Korea. Both were introduced to broaden the Steinway dealers' lines and act as an entry level product for future Steinway sales. This marketing concept of using two lower-priced lines was mimicked by Ford Motor Co.'s premier Jaguar division – after benchmarking Steinway – with its "X" and "S" types. To date, it appears that the Boston line has gained acceptance without damaging the Steinway image. The jury is still out on the Essex line.

Steinway long has had a premier restoration program to revitalize older Steinways. It provides Steinway owners with a means of refurbishing their pianos by skilled craftspeople and keeps employees busy. Under its Heirloom Program, Steinway actively buys up used Steinways, restores them and offers them for sale. This reduces the number of Steinways available for others to rebuild. In addition, Steinway does not sell its custom-built critical elements like soundboards or cast iron plates to rebuilders.

To maintain its cachet, Steinway produces and sells a select line of art case and limited edition pianos, which can cost as much as $675,000. A design by glass artist Dale Chihuly that featured a painted translucent glass top decorated with the Olympic flame was unveiled for the 2002 Winter Games in Salt Lake City. In December, 2001 Steinway introduced the first of its Legendary Collection, which offers one-of-a-kind recreations of historic Steinway art case pianos. Since 1998, Steinway has made only 29 art case pianos, of which 22 have been sold for an estimated $3.5 million.

To ensure that major artists play only on Steinways, the company works to develop All Steinway Schools among the prestigious music conservatories. The rosters includes 34 schools, including Juilliard, Oberlin, and the Yale School of Music. Unlike other piano makers, who offer their instruments free of charge, Steinway requires that the schools buy them. Oberlin, the oldest All Steinway School, has been buying Steinways for 125 years.

The connection between high-level performance and Steinways is reinforced through the Steinway Concert and Artists Program. The more than 1,300 artists that have been included in the program must not only meet certain performance standards but also own a Steinway and only perform on a Steinway. To support the program, Steinway operates a Concert and Artist Piano Bank with about 360 pianos. The program benefits the company, which gets free advertising at concerts, and the artists, who can depend on having a well maintained piano wherever they perform. When they're sold, these "used" pianos – which would ordinarily depreciate – frequently command prices close to the cost of a new piano, because they are well-maintained and have been used, and, occasionally, autographed by artists. This program is one of the only pure product endorsements programs, as no artist is paid to play on or endorse a Steinway piano.

"Because Steinway is located in the Astoria section of Queens – one of the most diversely populated patches of American soil – the current workforce represents 35 different countries of origin."

Highly Skilled Work Force

The Steinway work force is both highly skilled and dedicated. Because it is located in the Astoria section of Queens – one of the most diversely populated patches of American soil – the current workforce represents 35 different countries of origin.

Steinway employees take extreme pride in their work, and it is not unusual for some of the workers, especially those in tuning and "voicing," to place their signatures in a spot where it can not be seen by the purchaser. Those in the Restoration Department at times find signatures of their relatives and in many cases add their own when their work is completed. The Astoria plant has enjoyed unusually good labor relations. The current U.S. union contract calls for Steinway to manufacture their pianos in the U.S. only within the five boroughs of New York City, thus providing job protection.

Since the advent of radio in the 1920s, piano demand has suffered. While radio may not have hurt Steinway sales as much as it did other piano producers, the Great Depression, the phonograph, World War II, television, CD players, DVD, electric pianos, and synthesizers certainly did. In recent decades, the piano business had become a stagnant industry.

The text book solution for dealing with such a market is to build on the characteristics of the market, exploit the growth segments, emphasize quality, and continue to improve your product. Steinway's niched, differentiation strategy follows many of these elements and it is therefore no accident that it has developed staying power. Today, Steinway is to pianos what Rolex is to watches and Mont Blanc to quality writing instruments.

As is the case with many high-end products, Steinway generally suffers when the economy is poor. Last year, Steinway's sales were down 11 percent. Steinway's staying power, however, should see it through, as it has in past economic downturns. In spite of the fact that Yamaha has significant financial backing and sells to a broader market, it is unlikely that the diversified company would invest large sums in a business that does not have the returns of their other businesses.

Perhaps the most important lesson that Steinway teaches us is that success can be achieved even in a stagnant industry when a firm seeks out a strong niche, continually monitors its position, and finds new ways to differentiate itself. Strategy is a living, full-time job. Even when you're 150 years old.

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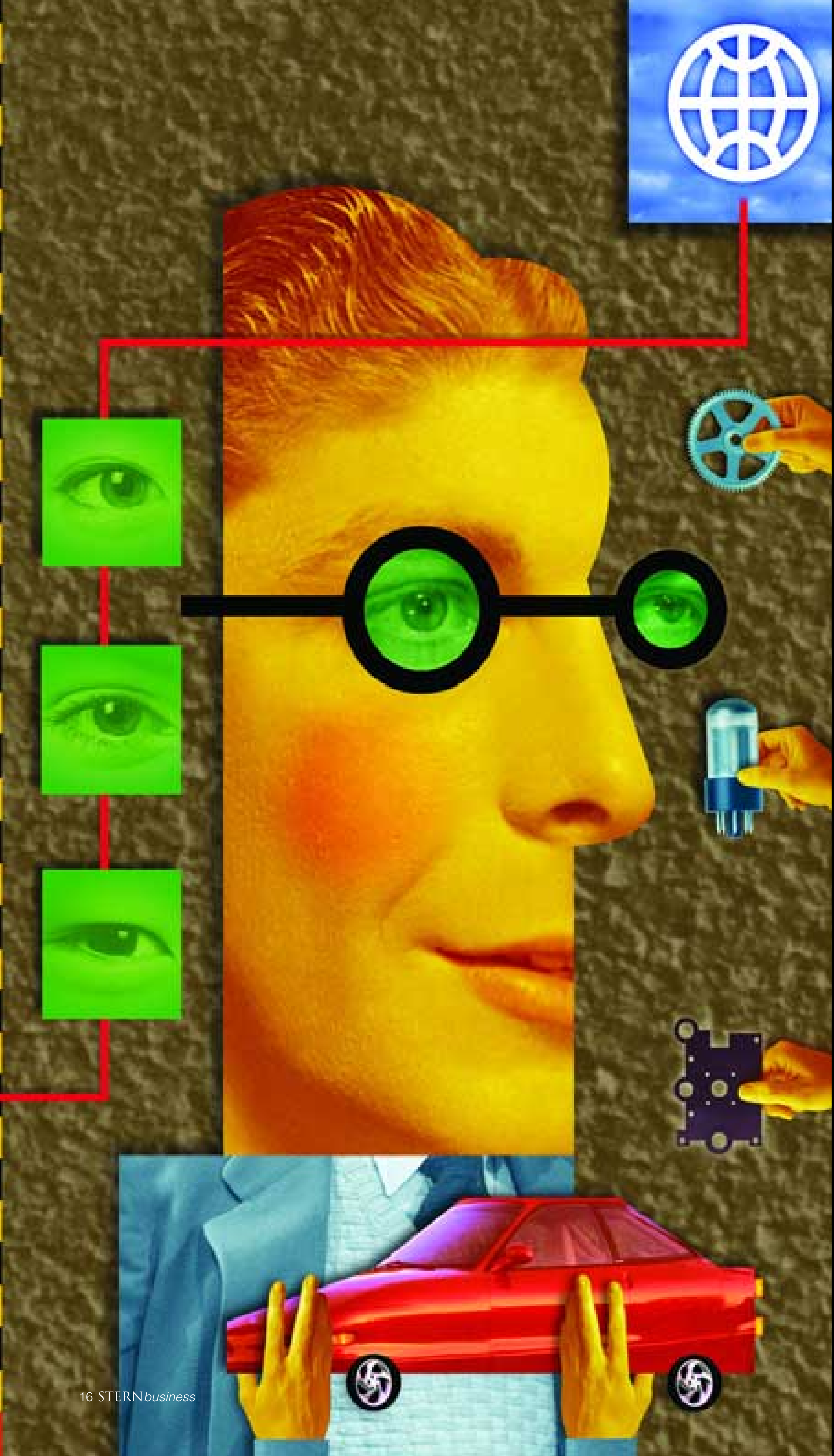


In the automotive industry, the drive for profits is relentless. A comparative study of dynamics between U.S. and Japanese automakers and their suppliers shows that both parties can add and create value when they successfully transfer knowledge over sustained periods.

SUPPLY CHAINS

By **Masaaki Kotabe, Xavier Martin,** and **Hiroshi Domoto**

In recent years, researchers have devoted increasing attention to the effects of supplier relationships on buyers' competitive advantage. By involving suppliers extensively in product and process development, assemblers (buyers) can speed product development cycles, lower input costs and boost end-product quality. Able suppliers don't simply manufacture parts according to detailed specifications, they also help design the parts and the corresponding manufacturing and technical processes. This division of labor is accompanied by exchanges of knowledge about products and processes to ensure suitable coordination. As a result, studies have concluded that buyers should foster high-involvement relationships with suppliers.

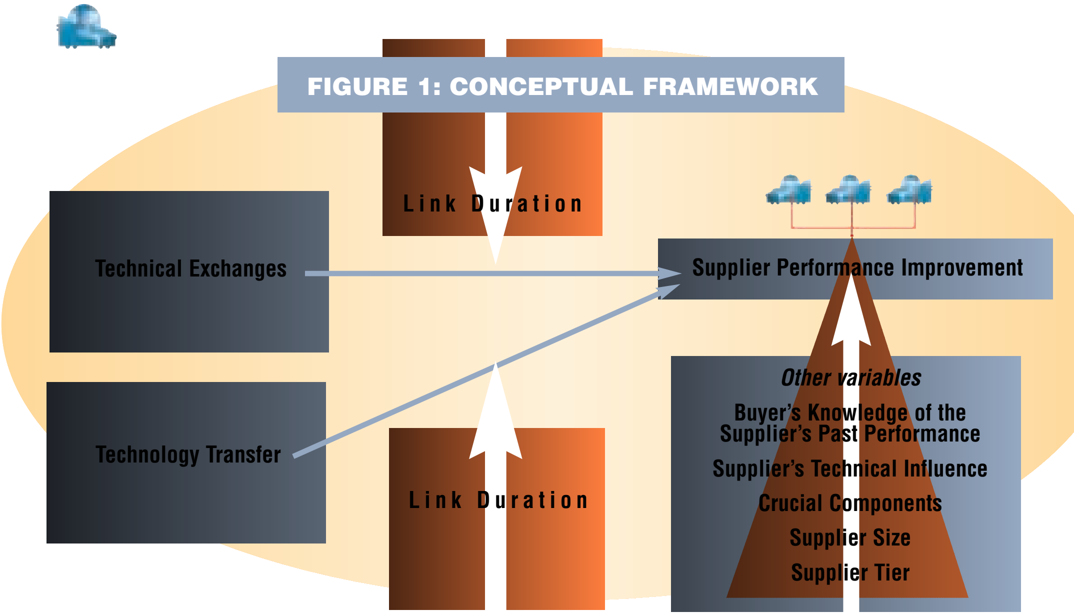
Of course, these relationships must be built to last. For what is effective in long-established relationships may not prove effective in newly-established ones. It takes time to develop the familiarity and expertise required for each partner to know when and how to draw on the other's resources, or to contribute resources. As two firms sustain a business relationship over time, they develop a highly idiosyncratic joint understanding that allows for uniquely efficient communication. These relation-specific skills or relation-specific assets make ongoing collaboration more effective.

Many firms held up as examples of successful knowledge management have developed comparatively long-lasting supplier links. But research has shed little light on whether and how firms with shorter links may benefit from knowledge-intensive sourcing, and on how the benefits of knowledge transfer vary with link duration. And while past studies show that buyers benefit when suppliers are intensively and durably involved in knowledge exchange, it is less clear under what conditions this improves suppliers' operational performance. So we set out to examine the connection between knowledge transfer and link duration, to learn what it takes to enhance supplier performance. For our purposes, supplier performance was defined as a combination of product development efficiency, process improvements, quality conformity, and short lead-time. To do so, we developed several hypotheses, surveyed U.S. and Japanese automotive suppliers, and ran the data through a multivariate model.

Our investigation rested on three linked premises assumptions about the parties involved. First, we presumed that operational performance improvement is a continuous process responding to ongoing technological opportunities. For a buyer-supplier relationship to endure, each partner must remain satisfied with the other's past performance and outlook. Thus, all else equal, the average absolute performance of suppliers in longer-established relationships should be higher than that of suppliers that have yet to prove themselves over time. To avoid this potential survival bias, we focused instead on the recent trend in a supplier's performance over the last two to three years. Our second premise was that gains in performance arise from intentional and organized knowledge transfer between a supplier and a buyer. The third premise: the ability to benefit from knowledge transfer depends on prior link duration. **Figure 1** presents a conceptual framework for this study.

Exchanges of Knowledge

We analyzed two forms of knowl-



edge transfer: technical exchanges and technology transfer. Conceptually, these two forms of exchange differ in the scope and level of the knowledge involved. A technique consists of discrete know-how required to solve a particular operational problem. So technical communications pertain to the relatively narrow and simple informational resources necessary to handle engineering issues. By contrast, a technology is a broader body of knowledge encompassing a set of related techniques, methods, and designs applicable to an entire class of problems. Its sharing or transfer involves higher-level capabilities.

"The coordination required for exchanging small-scale technical knowledge is typically simple. . . . By contrast, technology transfer involves a greater scope of activities and higher-level organizing principles."

The associations between technology and capability, and between technique and resource, add meaning to the distinction between technical and technological knowledge. Technical knowledge, consisting of narrower and more independent pieces of information, is a form of resources. Compared to discrete resources, capabilities are higher-order, more complex sets of routines with broader applications, and are harder to develop and mold.

The coordination required for exchanging small-scale technical knowledge is typically simple. Arranging regular meetings or long-term personnel visits, for example, is straightforward if it involves autonomous individuals or small work units. As technical information tends to be explicit or at least codifiable, its exchange is a matter of verbal or written communication. By contrast, technology transfer involves a greater scope of activities and higher-level organizing principles. It requires extensive and dedicated coordination, as large and functionally diverse groups interact both within and across firms for sustained periods of time. This renders technology transfer particularly costly.

Four Hypotheses

Past studies have argued that small-scale exchanges of technical information help improve the buyer's performance. Suppliers likewise stand to benefit when the partners steadily share technical knowledge to solve problems and enhance products and processes. Therefore, as **Hypothesis 1** suggests: The more technical exchanges between the buyer and the supplier, the higher the supplier performance improvement relative to two to three years earlier.

Knowledge transfer, by contrast, requires larger-scale commitments of time and groups of experts. Still, projects that allow one partner to access or replicate complete technological capabilities of the other partner, when properly implemented, enable a more efficient division of labor, and distinct improvements in technological competence throughout the industry chain. That leads to **Hypothesis 2**: The more technology transfer between the buyer and the supplier, the higher the supplier performance improvement relative to two to three years earlier.

Beyond these main effects, research suggests that buyers seek to further the benefits of knowledge transfer by shaping the balance of technical exchanges and technology transfer. Knowledge transfer is more difficult when buyers and suppliers lack familiarity. Of course, we do not expect the trend in a supplier's performance, by itself, to be inherently higher in longer links. Indeed, if parties to a longer-established relationship develop a longer-term horizon shielding the link from interruption in the presence of short-term performance dips, the main effect of link duration may appear weak or slightly negative. What's more, newer relationships are able to exploit easy opportunities for improvement while older partnerships must build past those by tackling less obvious improvement projects. However, we expect longer-established links, because they allow more relation-specific assets to develop, to magnify some of the performance effects hypothesized above. That leads to **Hypothesis 3**: The positive association between technical exchanges and supplier performance improvement becomes stronger as link duration increases.

The benefits of a long prior relationship stand to be larger yet when it comes to higher-level technology transfer. Technology transfer requires diverse functions of the supplier and the buyer to interact over multiple issues simultaneously. Under these circumstances, the benefits of having had the time to develop more relation-specific assets become all the more salient. That leads us to **Hypothesis 4**: The positive association between technology transfer and supplier performance improvement becomes stronger as link duration increases.

Testing Methodology

To test our hypotheses, we examined buyer-supplier relationships in the U.S. and Japanese automotive industries. We used well-established industry directories to draw random samples. We collected the data in two stages, first writing to prospective respondent firms to ascertain their willingness to cooperate, and then sending questionnaires to the individuals named by the firms. We asked a series of questions about the respondent firms' relationships with their main customer (an automobile assembler, or for second-tier respondents, another automotive component manufacturer). This yielded satisfactory response rates for this type of research. Ultimately, our sample for analysis consisted of 97 questionnaires, for a 24.3 percent response rate. In Japan, we received 105 usable responses to the 577 supplier companies that we solicited, or 18.2 percent. In defining both samples, we excluded subsidiaries where an automotive assembler was a major shareholder, as well as suppliers owned by foreign firms in each market. The responses cover a wide range of products and firm sizes. On average, the U.S. and Japanese suppliers were similar in annual sales (about $440 million) and in total employment (3,100 to 4,500, not statistically different). And most of the executives that responded held upper-management positions. In the U.S. and Japan respectively, they had 4.66 and 5.58 years of experience in their current positions and 14.01 and 19.90 years with the same company. This exceeds the two to three year timeframe for measuring our dependent variable, thus validating our research design.

Next we measured supplier performance by capturing a suppliers' performance improvement relative to its position two to three years earlier, in areas like product design, process design, product quality, and lead-time. These performance dimensions are also consistent with those used by assemblers to assess suppliers. These four items, when introduced in the factor analysis alongside all the items that make up our independent variables, loaded onto a single measure: Supplier Performance Improvement. The measure of Technical Exchanges contained six items pertaining to common, informal communication between engineers. The measure of Technology Transfer consisted of five items describing transfer of higher-level technological capabilities. The moderating variable, Link Duration, was measured as the number of years since the buyer and the supplier began their business relationship.

We ran the tests for U.S. and Japanese samples, respectively. And then we analyzed the results to isolate the effects of variables such as Link Duration. The first analysis contains a base model without interaction terms. The second includes a single interaction term, between Link Duration and Technical Exchanges. The third contains a single interaction term, between Link Duration and Technology Transfer. The fourth analysis includes both interaction terms.

U.S. Results

For the U.S. sample, the results support **Hypotheses 1** and **4**, but do not support **Hypotheses 2** and **3**.

FOUR HYPOTHESES

1. The more of the simpler, lower-level technical exchanges between the buyer and the supplier, the higher the supplier performance improvement relative to two to three years earlier.
2. The more of the more complex technology transfer between the buyer and the supplier, the higher the supplier performance improvement relative to two to three years earlier.
3. The positive association between technical exchanges and supplier performance improvement becomes stronger as link duration increases.
4. The positive association between technology transfer and supplier performance improvement becomes stronger as link duration increases.

Simple technical exchanges can enhance supplier performance, and this effect is independent of whether a buyer and supplier have established familiarity through a long-established relationship. But we found that long-established links do not promote performance improvement by themselves. (However, they can help when combined with active technology transfer practices.) Meanwhile, technology transfer has no independent main effect but its combination with longer link duration is beneficial.

Further analysis provided insight into the conditions under which technology transfer is likely to be beneficial. For example, the overall effect of Technology Transfer could be negative if Link Duration were very low, and becomes positive if Link Duration exceeds approximately five years. Interestingly, five years is approximately the length of a product design cycle in the U.S. automotive industry. Extrapolating this result suggests a distinct challenge for just-formed relationships: Premature use of technology transfer may harm supplier performance. Conversely, the payoff of transferring technology is particularly high in links of very long duration.

For the Japanese companies, we found that the results support **Hypothesis 4**, and partially support **Hypothesis 2**, but do not support **Hypotheses 1** and **3**. Overall, technology transfer can be a powerful driver of supplier performance, and its benefits accrue more in buyer-supplier links that have been established longer. Further analysis provided insight into the conditions for beneficial technology transfer. The effect of Link Duration becomes positive only if it exceeds three to four years. Interestingly, this is the typical length of a car design and component purchasing cycle in Japan. Extrapolating the result suggests the same challenge for new relationships as in the U.S.: Relying on technology transfer too early may not be beneficial, even though it is desirable in longer-established links.

Common Ground

The most similar results pertain to the significance and direction of the interaction effects. First, link duration does not moderate the effects of technical exchanges. Second, and more important yet, the effect of technology transfer increases with link duration, as per **Hypothesis 4**. The pattern of these results is broadly consistent with former Kyoto University researcher Banri Asanuma's arguments whereby buyers should initiate supplier relationships with relatively simple tasks, and subsequently undertake more ambitious joint or delegated projects as the relationship matures. This argument has been generalized outside Japan based on Japanese assemblers' behavior. Our results suggest that some substantive differences should nevertheless be taken into account when generalizing and implementing this recommendation.

"U.S. buyers and suppliers have recently increased their commitment to joint problem solving."

In the U.S. sample, there is evidence that smaller-scale technical exchanges promote supplier performance improvement. Our tests also suggest that the distinction between medium- and long-duration links is more relevant in the U.S. than in Japan, where the primary distinction is between short links and longer links. However, no significant effect of technical exchanges is found in Japan. The pattern of results for Japan suggests that immediate payoff from technical exchanges may be elusive (relative to Japanese competition with longer-established links), while technology transfer is most beneficial once the sourcing relationship has been in place for a moderate period. Thus, failing to reconduct a relationship past the first purchasing cycle – or after subsequent cycles – entails a substantial opportunity cost. This may explain why Japanese buyers have long been described as comparatively reluctant to change suppliers (and vice-versa).

Why do technical exchanges pay off in the U.S. sample but not in the Japanese sample? It is theoretically possible that U.S. firms are inherently more efficient at sharing such explicit knowledge. But prior research on the automotive industry does not support this view. A more plausible explanation is that U.S. buyers and suppliers have recently increased their commitment to joint problem solving. It is therefore comparatively easy to find technical exchange opportunities that enhance performance in the U.S., whereas Japanese firms, having long exploited this practice, have less to gain at this time. In both samples, meanwhile, the benefits of technology transfer remain contingent on prior link duration. This pattern may explain why supplier turnover has generally been higher in the U.S., but also why U.S. buyers have shown great loyalty to selected suppliers.

A further difference pertains to the time that it takes for technology transfer to start paying off. It takes longer in the U.S. than in Japan (5.1 years versus 3.6 years). Our findings may also help explain differences in the propensity to rely on extensive technology transfer. Having experienced higher turnover in the decades leading to the 1990s, U.S. links are more recent on average but also consist of some very old ties (up to 92 years). The fact that many U.S. suppliers with shorter-lasting relationships expect little benefits from technology transfer plausibly helps account for the difference in technology transfer emphases between the two countries. Indeed, when both samples are split according to the median U.S. link duration, the difference between countries is less among cases with longer-established links.

Technical exchanges may offer early benefits for U.S. firms, and should thus be encouraged. However, given the contingent benefits of technology transfer, a challenge is to make high-level technology transfer succeed in recent relationships. Our results suggest that U.S. firms adopting aggressive technology transfer practices prematurely are likely to find these efforts comparatively ineffective. This makes it more challenging to continuously upgrade technology.

In Japan, meanwhile, buyer-supplier links have started to fray in recent years. Relationships may now turn over faster, even for strong assemblers like Toyota. Thus, a challenge would again be to fortify recent links. While technology transfer starts paying off sooner, engaging in technology transfer too early is also problematic. Furthermore, our results show that small-scale technical exchanges do not improve performance relative to established Japanese competition. This implies a transition challenge when partners are replaced. The resulting tradeoff may explain the relative rigidity of Japanese buyer-supplier links. Unless relaxed, such rigidity could hinder adaptation in the face of global competition, radical technological change, or simply slower growth.

Building Relation-Specific Assets

For U.S. and Japanese firms alike, then, a key challenge is how to build up relational assets to render technology transfer effective. We suggest two plausible approaches. One may be to focus on accelerating the idiosyncratic learning process whereby buyer and supplier develop joint understanding and routines. Adding feedback and making the information flow bilateral is a known way to accelerate learning through communication. The other solution is to leverage firms' capacities to transfer technology, holding link duration constant. Prof. Martin and R. Salomon, a Stern alumnus now at the University of Southern California, have argued that two distinct capabilities contribute to successful interfirm knowledge transfer. Source transfer capacity pertains to a transferor's ability to transmit knowledge outward, while recipient transfer capacity pertains to a transferee's ability to assimilate knowledge from a willing external source. All things being equal, the most successful technology transfer will accrue in pairs of firms that possess the requisite combination of source and knowledge transfer capacity.

"Our results suggest that U.S. firms adopting aggressive technology transfer practices prematurely are likely to find these efforts comparatively ineffective."

These findings shed light on the conditions for any convergence between U.S. and Japanese practice. Given the accumulated difference in mean link duration (10.6 years in our sample) and the residual difference in supplier turnover, adopting a straight "Japanese" model with extensive technological cooperation may be difficult and potentially wasteful for various U.S. firms. However, some U.S. firms are already in a strong position to leverage their technologies and relation-specific assets. If supplier relationships start turning over faster in Japan, meanwhile, U.S. practice might yield useful lessons – regarding technical exchanges in recent relationships, for example.

Regardless of the context, two major lessons follow from our findings. First, suppliers stand to benefit from systematic knowledge exchange with buyers. Buyers, in turn, stand to benefit from a disciplined approach to knowledge exchange. Second, prior link duration conditions the effectiveness of more complex, higher-level technology transfer. Most important, higher-level technology transfer works best in long-established buyer-supplier relationships.

The collaborative mechanisms we describe are not unique to vertical inter-firm relationships – or to the automotive industry. They also stand to affect performance inside firms that integrate vertically or diversify (especially via acquisition), in horizontal technology transfer deals between rivals, and in alliances. In each case, separate organizations must share knowledge for joint advantage to develop. This requires effective knowledge transfer mechanisms. Though governance and initial knowledge positions may vary, relation-specific assets stand to be critical in enabling the pooling of corporate capabilities.

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To find out more about the research reported here, see the authors' extended paper, "Gaining from vertical partnerships: Knowledge transfer, relationship duration and supplier performance improvement in the U.S. and Japanese automotive industries," in Strategic Management Journal, *volume 24 issue 4, pages 293-316 (2003).*

STAGE MANAGER

ILLUSTRATION BY STEVEN SALERNO

New York is home to three dozen *Fortune 500* companies, the nation's major stock exchanges, and giants in the fields of broadcasting, advertising, finance, insurance, and health care. Amid this wealth of resources, however, Richard Freedman, management professor and Vice Dean of MBA Programs, has found rich pedagogical material in an unlikely place: the Metropolitan Opera. Housed at Lincoln Center, the Met is the premier U.S. opera company, with an annual budget of $200 million. The Met is a true repertory company with over two dozen productions and more than 225 performances every season. The company not only faces the difficult artistic problems one would expect in an opera house but it also must contend with the same problems that confront every business from marketing through finance. In 2001, Freedman created a case on the Metropolitan Opera for the core Managing Organizations course, which is taken by every first-year student.

SB: *How did you get involved with the Opera?*
Freedman: NYU Stern competes with 12 or 15 other business schools for the honor, and when you're competing you have to find areas where you have distinctive advantage. Our major advantage is that we are located at the very heart of business for the entire world. A fundamental aspect of Stern's strategy is to leverage this advantage. Former Dean George Daly teaches a course on leadership in which he brings in business leaders to discuss various aspects of leadership. One participant was Joseph Volpe, General Manager of the Met. Volpe is a legend in the world of opera. He worked his way up at the Met from carpenter, starting in 1964, and in 1990 become the General Manager of the leading cultural institution in the city. It's such a typically American Horatio Alger story. Professor Daly invited me to a meeting with Mr. Volpe to see if we could find some way that we could cooperate more. It only took a few minutes for me to become convinced that writing a case on the Met would be a great opportunity to advance our New York strategy and would be an outstanding educational experience for our students. Mr. Volpe has such a distinctive leadership style that when we began to talk it just became clear to me that if we could put our students in contact with him, we would give them a really unique experience.

SB: *How precisely do you bring the Opera to Stern?*
Freedman: Actually, we take Stern to the Opera. The primary way of teaching management is through cases, and cases are literature. I thought we could bring it to life by bringing our students into contact with the institution itself. The idea was, all of our first-year students would do this case, which involves analyzing the effectiveness of the Metropolitan Opera and Mr. Volpe's management methods. Students come to their own conclusions about the issues in the case. Then, they make suggestions for improvements. So far it is like every other case that students do in MBA programs. The difference is in what follows. The entire first year class then goes to the House at Lincoln Center. They get a guided tour that exposes them to the virtual city with about 3,000 employees that exists under the opera house that includes schools, production facilities, costume and wig making shops, set building, rehearsal halls, cafeterias, and so forth. They then see the dress rehearsal of an opera. This past year they saw the third act of Puccini's *Turandot* – truly grand opera at its grandest. Afterwards they have an hour-and-a-half question and answer session with Mr. Volpe. They get an opportunity to give Mr. Volpe their suggestions and they get his frank reactions. Something like this can only be done on this scale in New York City. Students rate this as one of the outstanding experiences they have with Stern in their first year.

SB: *Are you an opera buff?*
Freedman: I've become much more interested in the Opera. But my interest really has more to do with management than with music. It's not intuitively obvious, but the management problems in a large opera house are highly analogous to the problems faced in the most complex business organizations.

SB: *How so?*
Freedman: First of all, coordinating specialists. Opera companies are made up of highly specialized professionals including star singers, choruses, ballet dancers, orchestra members, and set designers. But for the opera to work, it has to seem absolutely, totally seamless. In other words, it should not look like a bunch of parts working together – rather, you should only resonate to the total experience. How do you get groups of people who are highly specialized to work together in a way that, from the customer point of view, the whole operation seems seamless? This is one of the most difficult problems faced by all senior business executives. Second, managing people, especially difficult people. Opera managers are known to have to handle very difficult personalities. In fact, business has picked up many opera terms that describes these difficult people – *prima donna* and *diva* are good examples.

SB: *How does the Met compare to a for-profit company as a business?*
Freedman: The Met's budget is about $200

million. It receives virtually no government subsidies. And it's probably four or five times bigger than the next biggest opera in the U.S. It has a product – just like many businesses. It must finance and sell its product like businesses. Sometimes unknowledgeable people dismiss the complexity of nonprofit organizations. Actually, they often have goals that are as complex and daunting as many businesses. The Met gets a large part of its revenues through fundraising. Out of the $200 million, the Met raises about $75 million per year, or about 40 percent. About 40 percent comes from ticket sales, another 10 percent comes from tours and other activities and less than 10 percent comes from its endowment. I use the analogy between the Met and NYU. NYU couldn't function purely on tuition, and the Met can't function purely on ticket sales. Their break-even point is selling about 90 percent of all available tickets, which they did in the late 1990s. But in the past two years sales have been down, and the Met has been losing money. That's largely because of the recession, the attacks of September 11, and the ensuing decline in tourism to New York City. It faces the same kinds of problem that many businesses face in these difficult economic times.

SB: *Can't they cut costs on the production side?*
Freedman: Met production costs an enormous amount of money. A new opera can cost $2 million to stage. But – and here's the difference between the Met and European opera houses – they build the production to last 20 years. In Europe, they'll build a production to last a couple of seasons. If you take a look at the level of detail and the quality of the costumes at the Metropolitan Opera, they're extraordinary. Sure, they could do it cheaper. But it really represents an investment for 20 years. Besides, the quality is part of the spectacle. It's part of the Met's strategic positioning. They're positioned at the absolute height of Grand Opera, and it's done in a huge house with 4,000 people. It is hard to cut the cost of singers because contracts are signed four and five years in advance. Union contracts determine labor costs. Of course, they could cut costs by reducing rehearsal time, but obviously this would show by reducing the quality of the product. So short-term cost cutting is very difficult and long-term cost cutting would be dangerous because it would affect their strategic positioning.

SB: *It's a competitive landscape for entertainment. And compared with movies or video games, Opera can appear expensive. Is the product priced optimally?*

Freedman: Of course, it's a matter of opinion. I recently saw La Bohème on Broadway. It received generally excellent reviews. It had chintzy sets and singers of limited ability who had to be miked, and a very small orchestra. Any comparison with the Met would be absurd. For the same money you can get a prime orchestra seat at the Met and see Franco Zefferelli's spectacular production with the world's finest orchestras and most accomplished singers. Actually, the more you learn about it, the more you would realize how great the value is at the opera. In fact, you can still get a decent seat for $35!

SB: *How would you characterize Joseph Volpe as a CEO?*
Freedman: The way I'd describe him is extraordinarily assertive and direct. He's a tough guy from Brooklyn. And he's honest. Like all great managers he is driven to excellence. He expects nothing but the best from his associates – and himself. Nevertheless, many find him to be intimidating. Personally, I believe he nurtures that image in order to control difficult situations. He cares a great deal about the people he works with which has led to enduring relationships. Many of the most prominent people in the opera world are close to him. Luciano Pavarotti, Placido Domingo, and Beverly Sills immediately come to mind. The fact that he came up the way he did gives him a lot of credibility. Let me give you an example. The Met hasn't had a strike in 20 years, and strikes have been endemic in the world of the performing arts. And he has 17 unions. If he was just a tough guy I don't think it would work. He's really an extraordinarily unusual person.

SB: *Recently,* The New York Times *reported on the prospective merger of Carnegie Hall and the New York Philharmonic. Citigroup CEO Sandy Weill, who is Chairman of the Board at Carnegie Hall, talked about it like it was a bank deal. Is this an indication that high culture is becoming more of a business?*
Freedman: I think it speaks more to the make-up of the board. The board is primarily composed of businesspeople who appreciate the arts. But their perspective is that of business. It would be unusual to have a discussion with Sandy Weill about Carnegie Hall that wouldn't be sprinkled with business aphorisms. More broadly, there have always been debates within all cultural institutions in the U.S. about art versus money. And sometimes that has led to very bitter strikes. Frequently, the two sides approach each other with stereotypical views. The orchestra sees the businesspeople as these industrial magnates who care nothing about art but are only interested in the bottom line. The businesspeople stereotype the people in the orchestra as children without any concern about costs. Managing this difference in perceptions is one of the main tasks in making a successful performing arts organization.

"Opera managers are known to have to handle very difficult personalities. In fact, business has picked up many opera terms that describe these difficult people – *prima donna* and *diva* are good examples."

SB: *How does the opera case help bridge that perception gap?*
Freedman: We teach it by exposing students to the complex reality of the situation. We're teaching our students to be able to see the world in a different and more complex way. I want them to see that organizations like the Met can not only do wonderful things, but sometimes they can be managed as well, or perhaps even better, than many business organizations. There's been so much student interest in it that Volpe is actually teaching a mini-course in our entertainment, media and technology specialization titled "Managing in the Performing Arts." Last year he hired two of our students as interns, and one is now working full-time at the Opera.

SB: *Are there any direct applications from opera to business?*
Freedman: I could treat this question as a joke – but I won't entirely. Opera is life writ large. Hyperbole is the norm. Every component of human emotion and interaction is there to be seen, generally in exaggerated form. Conceptually, they can be lessons to businesspeople. However, the important application is the ennobling affect that art has on the human spirit. This makes us better people – and better people are better businesspeople.

ILLUSTRATIONS BY GORDON STUDER

INDEPENDENTS' DAY

Even in a Hollywood dominated by corporate management, big-budget films, global alliances, and multimedia synergies, independent producers play crucial roles. Creating a lasting body of work requires far more than a nose for talent.

By **Al Lieberman**

On late Sunday night, March 23, 2003 the 75th Academy Awards drew to a close. Oscar, that infamous miniature gold creature, had been held, kissed, and fondled all evening by leading men and leading ladies, and by representatives of every craft assembled under the entertainment industries' union guidelines and Academy parameters. They had come together to congratulate themselves under the gaze of more than one billion viewers all over the world.

Late in the evening, after host Steve Martin had told his final joke, the collective audience held its breath as the father-son duo of Kirk and Michael Douglas opened the final envelope, the one that contained the name of the Best Motion Picture. But the fortunate person who laid claim to this ultimate award wasn't a starlet, or a director, or even the chief executive officer of a large studio. It was the producer. In this case, Martin Richards, the veteran Broadway producer who had also produced films such as *The Shining* and *The Boys from Brazil*. Dressed in elegant Broadway style, Richards accepted the award for the movie *Chicago*, which was hailed by audiences and critics as a successful translation of Bob Fosse's hit Broadway musical to the silver screen.

"Producers don't have to possess any of the skills necessary to make film . . . Instead, they must figure out how to get people who are the best at their crafts to do even better."

Amid the intricate and complex process that made *Chicago* work – choreography, costuming, direction and acting – Richards' role seemed to be rather prosaic. He arranged for the financing of the Miramax blockbuster. What made Richards' award somewhat anomalous wasn't merely the fact that it was for a movie in which heartthrob Richard Gere sang for the first time. Rather, it was because independent producers like Richards would seem to be at a heavy disadvantage in this age of nine-figure movie budgets, *Fortune 500* corporate ownership of studios, and the mandates of synergy, sequels, product placement, and global marketing.

Anyone can be a producer, or can decide to be a producer. It is one of the very few professions where a business card, an active credit card, a cell phone, and an idea can launch you into business. Yes this important and generally very credible profession or role in the Byzantine structure of the movie industry has frequently been shrouded in myth and stereotype. Of course, the reality of independent producers' worlds is a far cry from the swindler of old ladies portrayed and written about by Mel Brooks in his successful movie *The Producers*, which was launched as a highly successful Broadway musical in 2001. In *The Producers*, Max Bialystock, more habitual con artist than showman, took a terrible idea "Springtime for Hitler," sold partic-

"In an industry where risk and responsibility rode side by side, the mogul/producer took all the credit and shifted blame to quickly departing subordinates."

ipation several times over to a group of investors (in this case naïve older women) with the expectation that it would fail after a single show. Throughout Hollywood's history, in fact, independent producers – entrepreneurs who work within and without a corporate structure – have been vital to making interesting and profitable films.

Today, producers in the entertainment industries come in all flavors, depending on levels of experience, risk-taking propensity, financial resources, power and clout, and even the number of Armani suits in their closets. But at root, these are entrepreneurial managers. The producer Buck Houghton, in his book *What a Producer Does*, describes the producer as a "creative administrator, who guides and helps hundreds of people toward an objective that becomes increasingly clear-cut as the work proceeds from an idea." Producers don't have to possess any of the skills necessary to make film. They don't have to write, direct, act, compose music, or design costumes and sets. Instead, a producer must figure out how to get people who are the best at their crafts to do even better.

Evolution

The nature of producers – and of film production – has evolved over time. The original movie moguls who imprinted their names on the gates of the Hollywood studios were in fact independent producers without the title or credits. They operated on the basis of imperial clout, with an unquestioned power to hire and fire. Men like William Fox and Daryl Zanuck of 20th Century Fox, Louis Mayer of Metro-Goldwyn-Mayer, Jack Warner, the leader of Warner Bros.; and Sam Goldwyn, were truly micro-managers. They personally negotiated with talent, used studio money as if it was their own, changed scripts, hired directors, and supervised the marketing and promotion of the films – all while negotiating for the next project or planning expansion, the acquisition of theaters, and investments in new technology and equipment. They functioned as coordinators and heads of the production team, even when executives they hired had those same responsibilities. Ruling with a despotic hand, these producers had direct lines to New York bankers, talent agents, union leaders, and contract lawyers. Unshakable in their own confidence to judge great stories, they refused to accept blame for cinematic disasters. In an industry where risk and responsibility rode side-by-side, the mogul/producer took all the credit and shifted blame to quickly departing subordinates.

This model held from the birth of the film industry through the post-World War II era. But the studio system, under stress from government legislation, financial innovation, and growing entertainment conglomerates, has changed in the past few decades. With blue-chip global corporations increasingly dominating Hollywood, there is less tolerance for the old way of doing business. The entertainment and media businesses have changed as well. Today, they are as much about spreadsheets and internal rates of return as about hunches. The new era plainly called for a different approach. And so the moguls were replaced by flinty-eyed businessmen, lawyers, or bankers who have assembled today's entertainment conglomerates. These larger entities can reduce the risk inherent in film production through distribution on alternative platforms. Managers in this environment must understand complex assets like broadcast, cable, international markets, and home video – and the complex interactions among these assets.

Independents' Day

But even amid the growing corporate dominance of Hollywood, independent producers have managed to thrive and forge the new landscape. Some have done so by finding ways of striking profitable alliances with established conglomerates. The career of Harvey Weinstein, who with his brother Bob, founded Miramax Films in 1979, stands as a sort of template for independent producers. In the 1980s, the Weinstein brothers bootstrapped their way, making provocative, arty films like *My Left Foot* and teen-age horror films, whose reliable profits helped fuel film production. In 1993, the brothers sold Miramax to Disney, monetizing their investment while maintaining managerial independence. In the years since, Miramax has emerged as a high-quality, brand-name movie studio whose films – including *Chicago*, *The English Patient*, and *The Cider House Rules* – are perennial Oscar contenders.

Today, Harvey Weinstein is a corporate executive responsible for profit and loss at a huge division of a *Fortune 500* company, with reporting responsibilities to Michael Eisner, the chairman of Disney. And at the same time, he functions as a hands-on producer of cherished, hand-picked projects such as Martin Scorcese's epic *Gangs of New York*. Like the independent moguls of the past, Weinstein will intercede, bulldoze, and battle with everyone to accomplish his vision. But he sees it all as part of the overall responsibility of a producer to gain financial success and critical plaudits for his selected and championed films.

Other independent producers have proven adept at combining two or more media. David Geffen, who has made his mark and his billions as a producer of musical talent, is the toughest of the collective group of independent producers – and also the wealthiest. Geffen worked at Warner Bros., and then started his own record company, which included artists such as Cher and Aerosmith, and a companion film company that made hits such as *Risky Business* and *Beetlejuice*. In 1990, Geffen sold his record company to the Japanese firm MCA. Four years later, he joined with his friends, the director Steven Spielberg, and the producer Jeffrey Katzenberg, to form a new independent studio, Dreamworks SKG.

Barry Diller, another of the new-style independent producers, has carved a niche in the newest of media – the Internet. Diller initially thrived within corporate entertainment environments, running Paramount Pictures, and helping to launch Fox as the fourth television network. In the past decade, Diller has effectively been out of the movie-making business. But he has consistently brought the values and buzz of entertainment to new forms of media – first to the home shopping channel QVC, and then to the Internet. In 1995, Diller formed an investment vehicle to acquire online businesses. Snapping up properties after the dot-com bust, he has now built USA Interactive into a group of Internet companies with a transaction orientation that includes Expedia, Ticketmaster, Hotels.com, and Home Shopping Network.

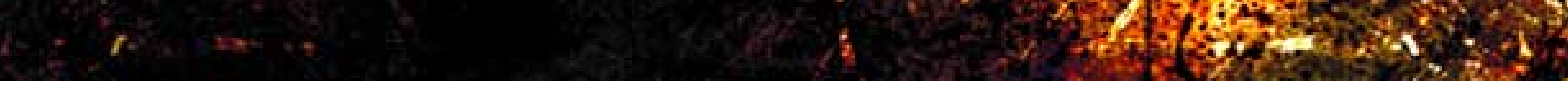
"Barry Diller, another of the new-style independent producers, has carved a niche in the newest of media - the Internet."

Another who has managed to cross industry and media borders is Peter Guber, who holds an MBA from NYU Stern. Guber rose to head Columbia Pictures in the early 1970s, developing films such as *The Way We Were*. In 1976, he left to become an independent producer. Teaming up with Jon Peters, he produced the 1980s smash hits such as *Flashdance*, *The Color Purple*, and *Batman*. In the early 1990s, he was recruited to head Sony Entertainment's movie division. When that relationship ended poorly, he returned to the role of independent producer and founded Mandalay Entertainment. Although its centerpiece is a movie production entity, Mandalay Pictures, Guber grasped the responsibility of the producer to reduce risk whenever possible. And so he has developed companies under the Mandalay umbrella that can launch other potential sources of revenues, such as television production, sports, and licensing/product placement.

Perhaps the hottest independent producer today is Jerry Bruckheimer, the man behind hit films such as *Beverly Hill Cops*, *Top Gun*, and *Pearl Harbor*. Last summer, he released back-to-back "blockbusters" – *Bad Boyz II* and the *Pirates of the Caribbean*. His company has also produced recent network television hits such as the CSI franchise. A producer at the top of his game, Bruckheimer seems also to have adapted a very different style from the typical aggressive, flashy and self promoting producer. Quietly dressed in head-to-toe black, he creates few waves – but huge profits.

Making movies today is far more complicated than it was when the first Hollywood pioneers arrived in Southern California in the 1920s. But at root, there will always be a place for the producer whose role as an entrepreneur – or as an intrapreneur within a corporate environment – is the integral ingredient in maintaining and filling the pipeline of new film projects. The rules have changed, the landscape is much more complex, and the stakes are far higher. But the role and responsibilities of the producer remain the same: Find the idea, sell the idea, finance the idea, get the idea made, own the idea and provide the investors a profitable return on the idea. Then do it all over again.

AL LIEBERMAN *is clinical associate professor of Marketing Entrepreneurship and Innovation and executive director of the Entertainment, Media and Technology Program at NYU Stern.*



JUST SAYING NO

By **Lauren G. Block, Vicki G. Morwitz, William P. Putsis, Jr,** and **Subrata K. Sen**

Adults may think teenagers don't pay attention to media messages urging them to avoid destructive behavior. But a study of a well-known anti-drug advertising campaign from the late 1980s reveals that they were.

Over the years, advertisements run by the Partnership for a Drug-Free America (PDFA) have turned into popular culture icons. Spots like "This is your brain . . . this is your brain on drugs" have become part of the lingua franca. Over the years, PDFA, a non-profit started in 1986 and backed by the American Association of Advertising Agencies, has received more than $3 billion in donated media from the broadcast, cable, and radio networks, more than 1000 newspapers, and more than 100 magazines and medical journals. The massive amount of donated media PDFA receives annually makes it the largest advertiser of a "single product" in the United States – after McDonald's.

But does all that spending work? After all, as any parent will testify, it can be difficult getting through to teenagers. So we decided to investigate whether the target audience of the advertising – adolescents – was listening.

Fortunately, there were good data available. Before it aired the ads, the PDFA began conducting annual surveys to independently test whether the advertising campaign was associated with a change in adolescents' drug use. These were known as the Partnership Attitude Tracking Surveys (PATS) and were obtained by getting teenagers to fill out anonymous questionnaires at central locations like malls. The first "wave" of PATS was initiated during February and March, 1987, three months before the first anti-drug messages were aired. Additional waves, which took place in 1988, 1989, and 1990, measured respondents' recall of PDFA advertisements. (The sample sizes of adolescents aged 13–17 years were 797, 1031, 870, and 1497, respectively.) These four waves formed a "natural experiment." Respondents during the first wave were not exposed to PDFA advertising, whereas respondents in subsequent waves were.

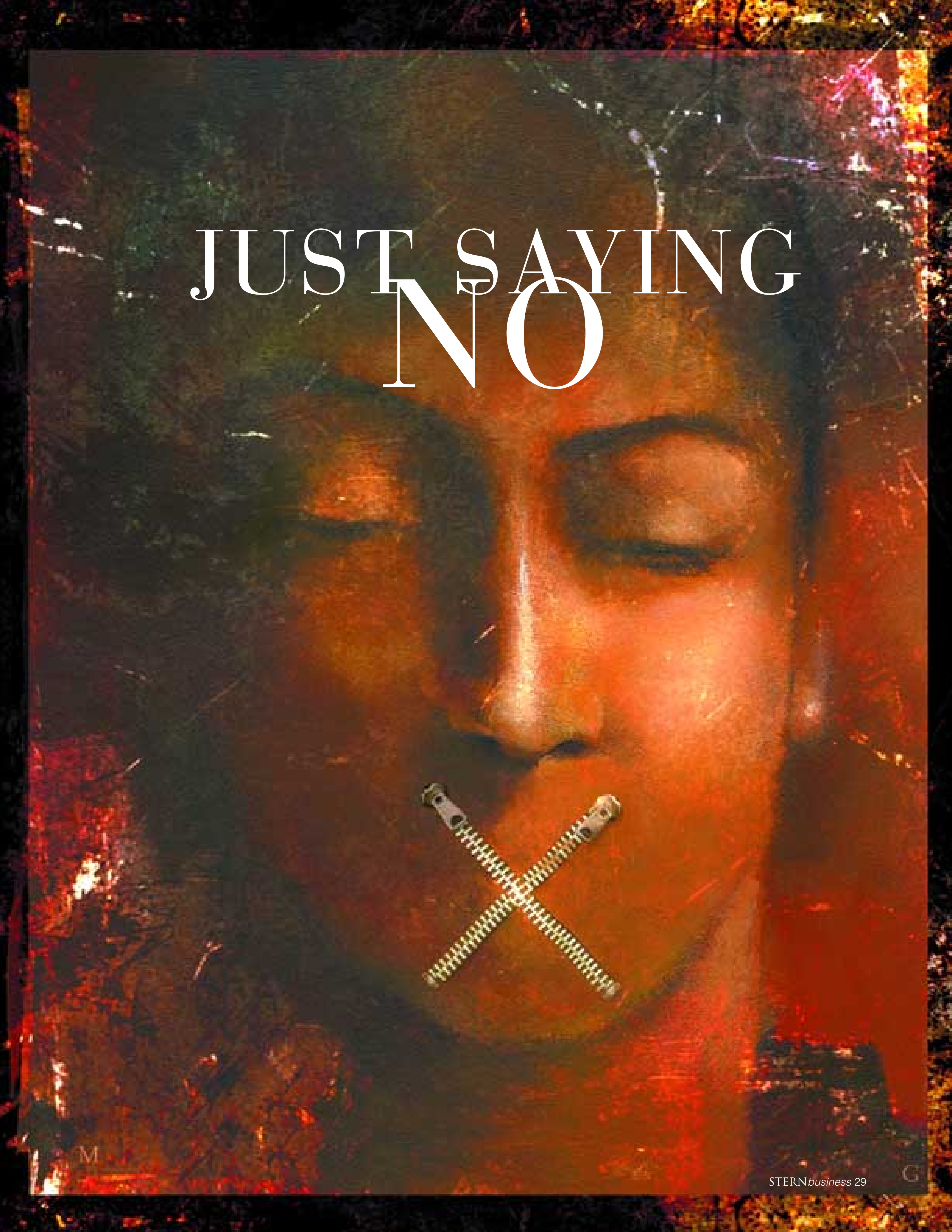
A preliminary examination of the PATS data reveals that the percentages of respondents who reported marijuana or cocaine/crack use in the previous 12 months did, in fact, decrease significantly between 1987 and 1990. Survey data from the University of Michigan's Institute of Social Research and National Household Survey on Drug Abuse corroborate this trend. But while this pattern is consistent with the hypothesis that anti-drug advertising reduces drug consumption, this analysis does not accommodate other potential explanations for changes in drug consumption over time, such as exposure to school-based anti-drug campaigns. To adjust for such other factors, we developed a detailed behavioral economic model that investigated the relationship between adolescents' recall of anti-drug advertising and their probability of using marijuana, cocaine, or crack – as well as the volume of use for those already using these drugs.

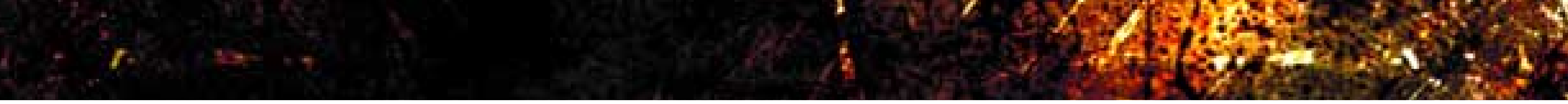
Model Behavioral

We began with an individual-level behavioral economic model of drug use, focusing on the impact of advertising. This well-established economic framework provided the rigorous link between the underlying theory and the statistical model needed to estimate individual behaviors. We then relied on health behavior theory to select the specific variables used within this empirical

ILLUSTRATION BY MICHAEL GIBBS

JUST SAYING NO





specification. The measures used in the analysis represented the predominant benefits and costs of drug use identified in major health behavior theories. We analyzed marijuana use separately from cocaine/crack use because reasons for use differ for specific drugs. And we combined cocaine and crack into a single category because 92% of respondents reported using both with equal frequency.

Respondents indicated how often in the past 12 months they had used each drug by selecting a number on a scale running from 1 – meaning no use – to 7 – meaning 40 or more times. These responses allowed us to determine both the percentages of respondents who reported using each drug in the previous 12 months and the volumes of use. In the case of users of both drugs, we divided their volume of use at the median and considered those below the median to be light users and those above the median to be heavy users.

The PATS surveys also included questions related to a variety of factors associated with drug usage. We used responses to these questions as input to our model. Perceived susceptibility was measured by asking respondents to rate three items (on 4-point scales) indicating the degree to which people risk harming themselves by using drugs. Perceived severity was measured by having respondents rate four items (on 4-point scales) indicating the degree to which they would fear the consequences of being caught with drugs. Attitudes toward drugs were measured by having respondents indicate their level of agreement with 14 items (on 5-point scales) describing benefits of drug use. Attitudes toward drug users were measured by having respondents indicate whether each of 27 personality characteristics would describe a marijuana, cocaine, or crack user. Other factors measured included peer pressure, and how difficult it was to obtain drugs. Finally, respondents were asked to read a short description of six advertisements that were aired nationally, and to indicate how often they had seen each advertisement.

The probabilities of a respondent's reporting use of marijuana and cocaine/crack over the previous 12 months were expressed in a standard "probit" formulation as a function of both the attributes of the individual (e.g., demographic characteristics) and his or her attitudes towards drugs and drug users, and perceptions of drug use itself (e.g., perceived severity). We considered three versions of this formulation, each of which involved a slightly different assumption about the relationship between the cocaine/crack and marijuana use decisions.

"The massive amount of donated media PDFA receives annually makes it the largest advertiser of a 'single product' in the United States – after McDonald's."

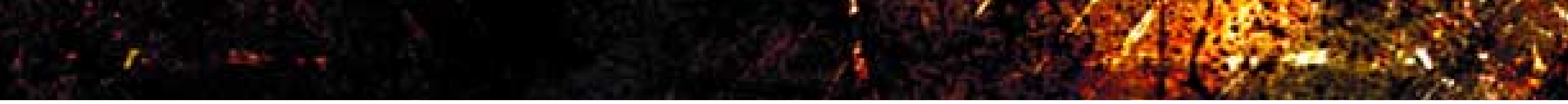
An Independent Choice?

First, we estimated the marijuana and cocaine/crack equations independently, assuming that the decision to try the two drugs is independent. (Empirical research suggests that the process may be sequential; that is, one first tries marijuana and then cocaine/crack.) Second, the common syndrome theory suggests that individuals have a "predisposition" to use drugs that manifests itself first in marijuana use. Third, certain factors associated with the experience of using marijuana could lead people to use harder drugs, such as cocaine/crack. This has been referred to as a "gateway" or "stepping stone" theory. These three alternatives resulted in different statistical specifications, which allowed us to test the hypotheses with the available data. In addition to the "use" choice, we investigated the decision regarding how much to use (the "volume" decision), given that an individual has reported using marijuana or cocaine/crack. For this analysis, individuals were categorized as "light" or "heavy" users.

The result is a classic sequential-choice decision: an individual uses the drug and then, on the basis of his or her experience and additional information (e.g., anti-drug advertising), decides whether or not to use the drug again. Accordingly, for each drug, we initially estimated stage one probability equations and then estimated the probability of a given individual's being a light or heavy user conditional on previous use. Thus, including only those who had previously used drugs, we estimated each second-stage equation using a dichotomous dependent variable indicating heavy or light usage.

The first "wave" of PATS (conducted before the initiation of anti-drug advertising) provided us with the data necessary to assess the determinants of drug use in the absence of PDFA advertising. This was the "control" in our natural experiment. We were then able to assess the significance of recall of PDFA advertising in terms of use and volume decisions via a series of "treatment" groups consisting of each of the subsequent waves exposed to advertising.

We began by estimating the three sets of probability-of-use equations ("independent," "gateway," and "predisposition") using the wave one data for marijuana and cocaine/crack. Then, on the basis of the best fitting of these equations, we estimated the second



stage regressions for the probability of being a light vs. heavy user, also using the wave one data. This provided us with a detailed analysis of the factors influencing the decision to use and the volume of use for each drug before the commencement of PDFA advertising.

So what did we find? Using nested tests, we concluded that the "predisposition" formulation – i.e. that individuals have a "predisposition to use drugs" that manifests itself first in marijuana use – fit significantly better than the notion that the decision to try the two drugs is independent. Consequently, we used this formulation throughout. In addition, the data led us to reject the hypothesis that marijuana use increases the probability of cocaine/crack use. To be sure, individuals who have used marijuana in the past are indeed more likely to use cocaine/crack. But the reason is that – statistically speaking – individuals who are predisposed to try marijuana are also predisposed to try cocaine/crack.

Does Anti-Drug Advertising Work?

This analysis, conducted with the wave one "control" group, provided the basis for analyzing the significance of recall of PDFA advertising in waves two, three, and four. The findings demonstrate that recall of anti-drug advertising was associated with a decreased probability of marijuana use. The advertising coefficients in the marijuana use equation were all statistically significant and of the "correct" sign. In the case of cocaine/crack use, the advertising variables were also significant in waves two through four. The estimated advertising coefficients in the volume portion of our results were all statistically nonsignificant with the exception of the wave four marijuana volume-of-use equation. This suggests that recall of PDFA's anti-

"Our results are consistent with the hypothesis that anti-drug advertising reduces the probability of marijuana and crack/cocaine use among adolescents."

drug advertising had little or no impact on the volume of use among existing users.

To ensure that the negative advertising coefficients imply that recall of advertising leads to lower marijuana and cocaine/crack use and are not due to the omission of variables like exposure to other anti-drug programs, we examined the correlation between the advertising-recall variable and the estimated equation error. This correlation was found to be statistically nonsignificant for each equation, suggesting that omitted-variable bias was not a significant problem.

Finally, we estimated the marginal impact of the advertising-recall variable to determine the change in the probability of use associated with a 1-point change in advertising recall, with recall being rated on a three-point scale. We estimated the cumulative impact on use probability given a particular wave's level of advertising awareness by subtracting the average predicted probability of use in the absence of PDFA advertising from the average predicted probability given the level of recall generated by PDFA advertising in that wave. The marginal effects of PDFA advertising on the probability of drug use were significantly greater for marijuana than for cocaine/crack across each wave. The cumulative effects suggest that, after three years of PDFA advertising, approximately 9.25 percent fewer adolescents were using marijuana and 3.6 percent were using crack/cocaine.

Our results are consistent with the hypothesis that anti-drug advertising reduces the probability of marijuana and cocaine/crack use among adolescents. However, our results also suggest that recall of anti-drug advertising is not associated with adolescents' decisions regarding how much marijuana or cocaine/crack to use among those already using each drug.

This study was not without limitations. Although the sample was constructed to be representative of American adolescents, central-location sampling was used. It is also possible that respondents were exposed to other anti-drug intervention programs in addition to their exposure to anti-drug advertising. However, past research has demonstrated that these alternative programs have been largely ineffective.

Despite these potential limitations, our findings have important public policy implications. Our model, based on survey data from 1987 to 1990, indicates that increases in amounts of anti-drug advertising are associated with decreases in teenage drug use. During this time period, media financial support for anti-drug advertising increased, from a low of $115 million in 1987 to a high of $365 million in 1991. Given the results, this increase appears to have been a worthwhile investment.

A longer version of this research appeared in the American Journal of Public Health, *August 2002, Vol 92, No. 8.*

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The Bond -

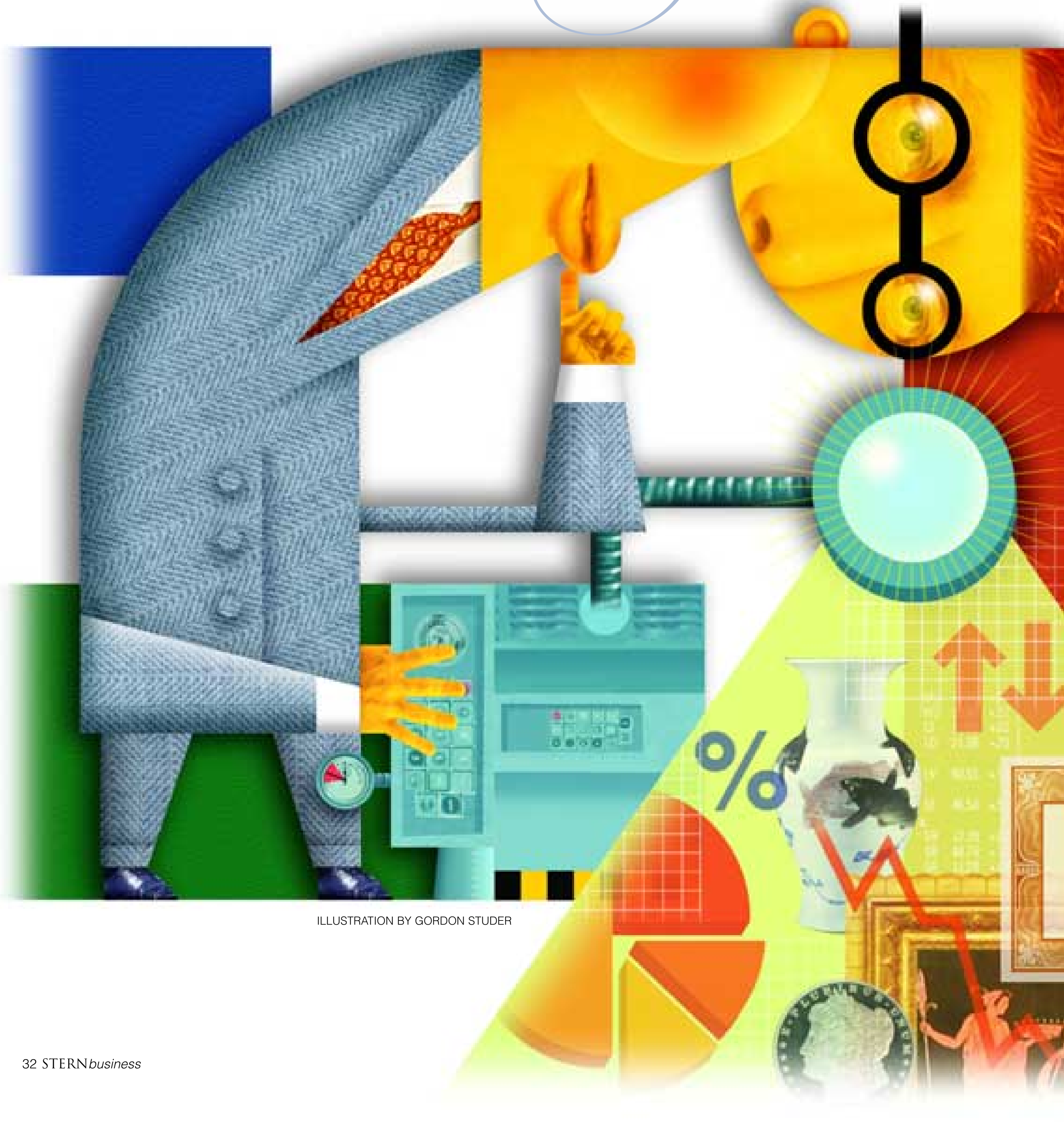
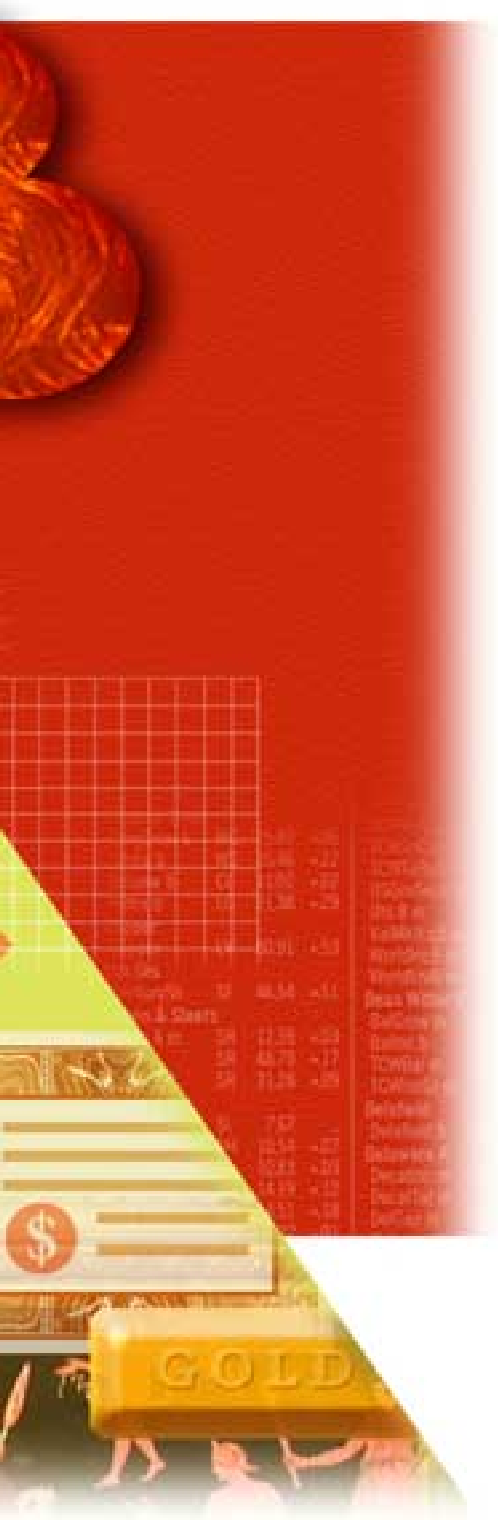


ILLUSTRATION BY GORDON STUDER

Rating Game

By **Lawrence J. White**



As regulators try to clean up the mess on Wall Street, they are neglecting one of the weak points in the financial markets. To improve the efficiency of the markets, the SEC should scrap – or at least overhaul – its regulation of the credit-rating business.

The U.S. Securities and Exchange Commission (SEC) currently has its hands full dealing with the corporate governance mess. But as it grapples with the fallout from Enron, WorldCom, and Global Crossing, the agency faces another problem that may well have as much importance for the efficient operation of the United States' financial markets: the bond-rating industry's obscure but nearly impervious regulatory barriers to entry.

In January 2003, in response to the requirements of the Sarbanes-Oxley Act of 2002, the SEC released its "Report on the Role and Function of Credit Rating Agencies in the Operation of the Securities Markets." Unfortunately, the report was an excuse for more delay in addressing the problem. Instead, the SEC should be pursuing solutions that would tear down these regulatory barriers.

Some Background

Credit-rating firms have been around since before the Civil War. In the late 19th century, R.G. Dun & Co. employed a network of correspondents who reported on the creditworthiness of companies and individual merchants throughout the United States. John Moody published the first public bond ratings, for railroad bonds, in 1909. Poor's Publishing Co. followed in 1919; the Standard Statistics Co. began issuing ratings in 1922. The two merged to form Standard & Poor's in 1941, and McGraw-Hill absorbed S&P in 1966. The Fitch Publishing Co. began its ratings in 1924. The business blossomed, and government regulation of the financial industry, from the 1930s onward, provided an extra push. As the capital markets developed over the course of the 20th century, the bond-rating firms came to occupy an important place in the investment world.

"The NRSRO designation erects high barricades to entry into bond rating, providing a sinecure for the incumbents and putting a damper on the introduction of fresh ideas, methodologies, and technologies that entrants might otherwise bring."

Today, bond-rating firms like Standard & Poor's and Moody's primarily provide judgments about the credit quality of debt instruments like bonds, issued by companies and by governments. The information that the bond raters provide can be seen as part of the process by which lenders (bond buyers) try to gather information so as to pierce the "fog" of asymmetric information and determine to whom to lend (whose bonds to buy) and on what terms. The ratings can also be seen as part of the efforts by borrowers (bond issuers) to "tell their story" as to why they are worthy recipients of lent funds.

An Exclusive Category

The SEC's regulation of the bond rating industry began in 1975 with perfectly good intentions. As bank and insurance regulators earlier had done for their regulated institutions, the SEC wanted to use corporate bond ratings to set minimum capital requirements for broker-dealers. But the SEC realized – apparently, for the first time among regulators – that specifying the use of ratings also required specifying whose ratings could be used. After all, what would prevent a bogus rating company from awarding (for a suitable fee) "AAA" ratings to any corporation's bonds? And in that instance, could the broker-dealers then use those "ratings" for regulatory purposes?

Consequently, the SEC duly created a new regulatory category – "nationally recognized statistical rating organization" (NRSRO) – and immediately "grandfathered" the three major incumbent bond raters – Moody's, Standard & Poor's, and Fitch – into the category. For these firms, rating debt instruments has been a profitable business. Any company or institution that wants its debt held by regulated financial institutions needs to get a rating from one or more of the accredited agencies. What's more, the three large firms have largely had the rating market to themselves.

In the 17 years between 1975 and 1992, the SEC bestowed the NRSRO designation on only four new entrants. However, by the end of 2000, mergers among them and with Fitch had reduced the field to just the original three. Between 1992 and February 2003, the SEC did not designate a single new NRSRO, even though several firms applied for such status. After a protracted process, and a month after the SEC's January 2003 report that promised more study of the state of competition in the ratings business, the SEC admitted a new member to the rating agency club. It extended the NRSRO designation to Dominion Bond Rating Service, a Canadian firm. As of today, then, there are only four NRSROs.

Why does the NRSRO designation matter? Almost all regulated financial institutions – banks, insurance companies, pension funds, etc. – must heed the NRSROs' ratings in deciding which bonds they can hold in their portfolios. For example, banks cannot hold bonds that are below "investment grade."

Accordingly, any would-be bond rater that initially lacks the NRSRO designation would have great difficulties in getting the time and attention of bond issuers. The start-up entity's rating would carry no weight in the portfolio decisions of banks and other regulated financial institutions. The NRSRO designation thus erects high barricades to entry into bond rating, providing a sinecure for the incumbents and putting a damper on the introduction of fresh ideas, methodologies, and technologies that entrants might otherwise bring.

Captive Audience

In essence, the SEC has given the incumbents a captive audience: the entire U.S. bond market. In turn, the weight of U.S. capital markets on the global financial scene extends the influence of these few raters far beyond our borders. Further, the Basel Committee on Banking Supervision, under the auspices of the Bank for International Settlements and representing banking regulators around the world, has proposed expanding the regulatory influence of ratings to other countries. One of the Committee's three proposed methods of determining banks' minimum capital requirements would use the banks' borrowers' bond ratings (when available).

There is an irony here: Public-sector financial regulators have long been using private-sector information (the ratings) to supplement their safety-and-soundness judgments. Regulatory critics have recently urged regulators generally to incorporate private-sector information into their judgments. Yet it is one thing to use impersonal market information (from, say, the Treasury bill market); it is quite another to require the use of private-sector rating information. The latter effort cannot avoid the "whose ratings" problem – and the potential abuses that can follow.

The potential for bad economic outcomes under the SEC's restrictive and protective regulatory regime is clear. Not only are the standard consequences of inadequate competition – excessively high prices and profits, and stodgy behavior – to be expected. The current regulatory arrangement also runs the risk of squelching new ideas and innovations in bond ratings and solvency assessments if the handful of incumbents somehow concludes that the innovations are not worthy of their notice.

This innovation question raises a larger issue: How could one tell if the incumbent bond rating firms currently meet a market test? With regulatory requirements that the incumbents' ratings must be heeded, the capital markets have no choice but to heed them. The capital markets have no way of knowing or discovering whether there are better, more efficient and effective ways in which the capital markets might assess the creditworthiness of bond issuers – or whether there are better, more efficient organizations that could conduct those assessments. The efficiency of those markets themselves is potentially affected.

The Path to Reform

Clearly, the public policy goal should be to improve competition and to increase the potential for innovation in the ratings business. How can we get there from here? There are two sensible routes. By far the best is for the SEC, and other financial regulators, to cease delegating their safety judgments to a handful of protected bond raters. In essence, the regulators should make the same safety-and-soundness judgments about bonds that they currently make about loans and other financial assets.

The SEC could then withdraw the NRSRO designation. The financial markets would then be free to make their own decisions as to which rating companies – incumbents or entrants – offered the best judgments about the relative safety of a company's bonds. Or they could decide that rating companies might no longer be needed in the 21st century, given the information revolution of the past few decades. Also, if rating firms are still valued, the markets could make new judgments as to what business model is most appropriate. Should the raters earn their revenues from fees charged to the rated companies, as is currently the case for the four incumbents? Or should they charge investors, as was true prior to the 1970s and as a few small non-NRSRO raters still do?

"The SEC must assess an entrant's track record of bond failure predictions. The agency must also assess incumbents' performances – which it has never done."

If the removal of the NRSRO designation is too radical, there's Plan B: The SEC must cease barricading entry and must permit qualified firms to attain the NRSRO designation. This means that the SEC must assess an entrant's track record of bond failure predictions. The agency must also assess incumbents' performances – which it has never done.

However, the SEC's tentative criteria for assessing a NRSRO, which the Commission proposed in 1997 but never finalized, should be scrapped. Those criteria focused on measuring inputs to the rating process rather than on a firm's rating performance (i.e., a bond rater's track record of accuracy with respect to bond defaults). Measuring inputs could be fatal to a rating firm that might employ innovative methodologies and that might not use traditional inputs. Those 1997 criteria also would create a "Catch 22": To receive the NRSRO designation, a rating organization would have to be "recognized as an issuer of credible and reliable ratings by the predominant users of ratings in the United States." Of course, if an organization is not already an NRSRO, recognition as a credible rater by the "predominant users of ratings" would be extremely difficult (if not impossible). Instead, sensible criteria should focus on the accuracy, efficacy, and competency of rating firms – incumbents, as well as prospective entrants – with respect to bond defaults.

Of course, if such assessments are beyond the SEC's capabilities, there's always Plan A: Cease the safety delegations to the bond raters, and eliminate the NRSRO category.

The possible paths are clear. The time for action is now. Instead of studying the issue further, the SEC should start tearing down the regulatory barriers that protect incumbent credit-rating agencies at the expense of potential competitors – and at the expense of investors.

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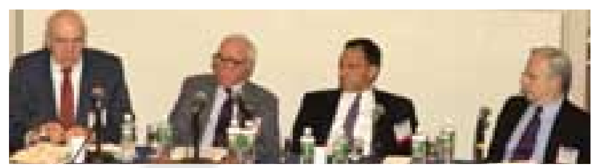
Governing

P r i n c i p l e s

The debacles at Enron, Worldcom, and a host of other companies have touched off a wave of reform and reflection. At an event hosted jointly by NYU Stern, The NYU Center for Law & Business and the New York Stock Exchange, the Chief Executive Officer of Lehman Brothers, a former chairman of the Federal Reserve, and a veteran corporate statesman delve into the state of governance.



Left to Right: Paul Volcker, Felix Rohatyn, Richard Fuld, Jr., and Dean Thomas Cooley.

Since the stock markets peaked in 2000, a series of accounting and financial scandals at publicly held firms have shattered public confidence and spurred legislators and regulators to act. Measures like the Wall Street research settlement and the Sarbanes-Oxley Bill were aimed at rooting out some of the conflicts of interest embedded in the corporate governance system. Some critics charge that the reaction has gone too far, while others believe much more work needs to be done.

On May 29, 2003, as part of the first Directors' Institute, a distinguished panel gathered to discuss the issues surrounding corporate governance. It included: Richard Fuld, Jr., (Stern MBA '72), the chairman and chief executive officer of Lehman Brothers; Felix Rohatyn, the long-time Lazard Freres partner who served as chairman of New York's Municipal Assistance Corporation from 1975 to 1993, and as U.S. Ambassador to France from 1997 to 2000, and who currently runs his own advisory firm and serves on several European corporate boards; and Paul Volcker, who in a public career that spanned the administrations of every president from John F. Kennedy to Ronald Reagan served as an undersecretary of Treasury, president of the Federal Reserve Bank of New York, and chairman of the Board of the Governors of the Federal Reserve system from 1979 to 1987. Volcker, the first Henry Kaufman Visiting Professor at Stern in 1998-1999, currently chairs the International Accounting Standards Committee Foundation. Stern Dean Thomas Cooley moderated the discussion.

ILLUSTRATIONS BY JAMES YANG

Thomas Cooley: *A lot of observers have argued that the malaise of the U.S. economy, the tepid recovery, the decline of the dollar, and the sluggish stock market may all have much to do with the widespread loss of confidence in the governance of U.S. corporations. How important is governance to the economic situation?*

Richard Fuld: The truth of the matter is investors lost $8 trillion. The accountability clearly would never rest with them. It has to rest with somebody else. So we have to shore up the system so that doesn't happen again. That would be a very difficult task in itself if it's just about corporate governance, because it's not. For us to get a real turnaround, we need clarity on the economic environment, on homeland security, on geopolitical issues like Iraq, Iran, and North Korea.

Of course, corporate governance does matter. CEOs and investors for pension funds know that they have a responsibility to deliver a return. A lot of them are frozen, because they look at these complicated economic and geopolitical issues and they say, number one, I'm suppose to control risk. If you talk to a trader, the trader will invariably say, if he has a 55 to 60 percent shot of being right, that's terrific. But for many of you that sit at the top of your companies, if you have a five percent chance of losing your firm on a bad decision, that's the part you're going to focus on. Rebuilding confidence will be tough, and it will require best practices, board independence, strengthening individual board committees, having senior management be more accountable, and increasing disclosure. A lot of it has to be self-regulation, just making sure we all don't put our foot in our mouths and say and do stupid things.

Felix Rohatyn: There is a direct link today between our defense posture, our overseas security posture, and the issue of corporate governance and the safety and protection of the capital markets. Today we need $1.5 billion a day coming in from overseas to finance our deficits. The dollars come in as foreign direct investment, which is the most long-term investment, or as portfolio investment. After the Euro came into being, there was a $300 billion inflow into this country in 1998 and 1999. Last year there was $50 billion. We cannot afford to lose the foreign investors, just at the time when our deficits are getting bigger. In addition to which we're getting this foreign investment to fight wars from countries that don't want us to fight these wars. The view from overseas, especially Western European countries, which have most of the money here, is by and large the perspective of "casino capitalism."

"I think all our failures of corporate governance – and they are clear, and they are not limited to a handful of people – are representative of a wider malaise."

The scandals involve 12, 13, 14 companies, which is certainly not a majority of the thousands of companies that are publicly owned. But what about all these companies on the NASDAQ that collapsed and cost their stockholders huge amounts of money? The question is, where were the regulators, where were the directors? Let's say a director is sitting on the board of a company that is not making money, and that sells at $270 on the Exchange. There is a question of whether they have any action that they can take when they see a company's securities totally outrunning any reality that might be delivered in terms of value, and where a lot of people are going to get hurt.

"If anybody really thinks that individual board members are qualified to dig into the businesses and really understand the day-to-day functioning of financial service companies, they're mistaken."

We have the best capital market system in the world. And we have two bookends. On one side is a very sophisticated regulatory system, and on the other side is a sort of Protestant ethic. The combination of the two has served us well over the years. But over these years, both of these bookends began to fray.

When I used to go to Washington, I would talk about the stock market with my driver. He had owned stock in this company out in Virginia where the stock went from two to $300, and he sold it at $240. Now it's at $4.70. I asked what made him sell it. And he said, 'I kept taking these people out there and I would look at them in the rear view mirror and they looked like bad people.' I thought that this guy was right. You look at the people either who are going there or who are running it, instead of looking at pieces of paper that are wrong.

I don't think markets should have a philosophy of *caveat emptor*. The financial markets are such a huge part of our economy and our social life. They determine how underfunded or overfunded pension funds are. They determine whether cities and states are going to cut their budgets. Capital markets and capital values today are completely integrated into our society on every level. To me, I guess, that is the most interesting and the most debatable aspect of a lot of these things.

Paul Volcker: The last time I was in this room was in the spring of 1999, addressing a group of second-year MBA students about to graduate – and we had stocks increasing for the last 15 years at an annual rate of 17 percent – I asked how many thought the stock market would rise an average rate of 10 percent a year over the next 10 years? Every hand went up.

My friend Mr. Rohatyn underestimates the problem. There are only 250 working days in a year. We are running a $500 billion a year current account deficit. We export let's say $200 billion in capital a year. That is $700 billion a year. To finance that you've got to get in $3 billion a day.

Rohatyn: Well, I wasn't counting weekends.

Volcker: And it's not flowing in spontaneously these days. Most of our deficit is being covered by central bank purposes in Asia, and that's not exactly the kind of thing you think of as a spontaneous reinforcement of the glories of American capitalism. We've been very proud, and rightly so, of our capital markets and our economy. But I think all our failures of corporate governance – and they are clear, and they are not limited to a handful of people – are representative of a wider malaise. There are deficiencies that are rather widespread in corporate governance that have been revealed. I don't know anybody else that has a very good substitute, but we have given an argument against the anti-globalists and the anti-capitalists that is unfortunate.

I find myself wobbling between the feeling that there is somewhat a sense of denial in the business community, and a feeling there is a sense of overkill. There is a lot of emphasis on the distinction and the two roles of the board as an oversight body and the management as a management body. But it's a distinction that hasn't been made in the reality of running many businesses. In my experience, boards of directors tend to be a collegial body. They are looked upon to participate in the business decisions and the strategic decisions of the company. It's hard to offer a critical different opinion, and stand aside a little bit from management, when you are so involved in the decision-making yourself. How can I quiz the chief executive about things that might be going wrong and making sure that he's got a control system in place? You don't want to be the guy at the board meeting who is always raising questions and appearing to be out of the spirit, the collegial spirit, of the management of the institution.

Given all that's happened, something has to be done about the auditing and accounting side. I recognize that the Sarbanes-Oxley bill has elements of detail and overkill in it, but overall I think there was a need for some mechanism beyond self-regulation to impose a discipline on the accounting and auditing process. It puts an enormously heavy burden on a board of directors and particularly the auditing committee, and that is requiring an adjustment in boards of directors and auditing committees in particular. If you were a responsible chairman of an auditing committee prepared to carry out the mandates of Sarbanes-Oxley, you better be prepared to spend at least a week a month on your duties as your part-time director.

I don't think all this talk about independent directors is going to be very effective unless there is some leadership among the independent directors that recognizes a responsibility for appropriately questioning the actions of the management and maintaining some control over the agenda of board meetings. I come to the conclusion that for a big, widely held public company, where there is no natural ownership interest that expresses itself in a very direct way, there ought to be a non-executive chairman who clearly has the responsibility for leading independent discussions as necessary among the independent directors.

Audience Question: *I've been a director of a very large corporation, and I'm beginning to see some of the overkill from the directors that have law degrees becoming the heroes. We're asking fewer questions about business management ideas five and 10 years out. I think if we develop a "we" versus "them" attitude on the board, it's not going to function well. Don't we have to be careful so the independent directors don't get so independent or get full of our own power?*

"We have two bookends. On one side is a very sophisticated regulatory system, and on the other side is sort of a Protestant ethic. The combination of the two has served us well over the years. But over these years, both of these bookends began to fray."

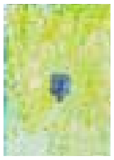
Volcker: Getting the balance right is the heart of the matter. I guess I just conclude that if the balance tips too far to the collegiality, you have no leadership of the board other than the chief executive officer himself. If you have an independent chairman who is too intrusive, then you've got dual leadership of the management and you get in trouble. I have been on boards where you have non-executive chairmen, and it has worked well. Back when I was a banking regulator, occasionally I'd run into a bad bank, and the chairman was reluctant to respond. So occasionally I'd go to a director and say something. The answer that I frequently got was don't go to me, I'm just a director. Go to the chairman. Well, he was the last guy you wanted to go to.

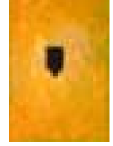
Rohatyn: I don't believe there is any such thing as an independent director, nor do I believe there should be necessarily. I think all directors essentially are management directors. If they're not, they probably shouldn't be there. The financial institutions that own 70 percent of the capital in this country should be on boards of directors and shouldn't just take the position that they'll just sell this stock if they don't like what's happening.

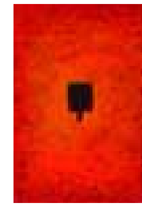
I sit on some European boards where you have this set-up of a non-executive chairman. With their culture, it works. I'm not sure it would work here. They also have supervisory boards as well as management boards with different responsibilities. There is something to be said for a board whose sole responsibility is advisory and of people who are non-management people.

Fuld: The boards are clearly supposed to be there to provide that check and balance. But if anybody really thinks that individual board members are qualified to dig into the businesses and really understand the day-to-day functioning of financial service companies, they're mistaken. You can have a collegial board, by the way, where your directors do ask questions. Henry Kaufman, who a lot of you know, sits on my board. He is not shy at all and is not retiring, and loves to ask a question. But I approach it from a very different way. He is there covering me, because if he asks the right questions and we don't have those answers, we'd better get them.

I gave a presentation to my board about three months ago. We spent three and a half hours going through all $250 billion of our balance sheet, line by line. At the end I said let me tell you now how we can theoretically change the value that we showed you at risk. In seven minutes, I went through four line items saying here is where I could hide derivatives, volatility trading, and high-beta transactions and private equity. We increased the risk from one billion in the vulnerable zone to $72 billion in the vulnerable zone. Then, one of the directors asked how they are supposed to know where we stand? I responded that if I'm a bad guy, I'm going to get you. The directors are not going to have the capability to understand the real inner workings if somebody wants to hide a trade or change the accounting. And so I think to rely on the board as the ultimate watchdog is not valid or fair. ■







Dial "C" for Competition

By **Nicholas Economides**

The telecommunications industry has been blessed by very significant technological changes and innovation that have cut costs dramatically. Technological innovations have driven down costs of essential inputs to telecommunications services, such as computing, information storage, and transmission. And such costs are expected to keep decreasing for many years to come. Digitization, the integration of telecommunications services, and the widespread adoption of the Internet have created very significant business opportunities and many new products and services.

And yet consumers – both business and residential – have not reaped the full benefits of the cost reductions and the innovations. Historically, in many industries, the creation and enhancement of competition have made it possible for consumers to reap the benefits of technological innovation. But in a network industry, such as telecommunications, services are produced by combining different elements and components of a far-flung network. Here, consumers can benefit fully only when the markets for each of the constituent parts of the network are competitive.

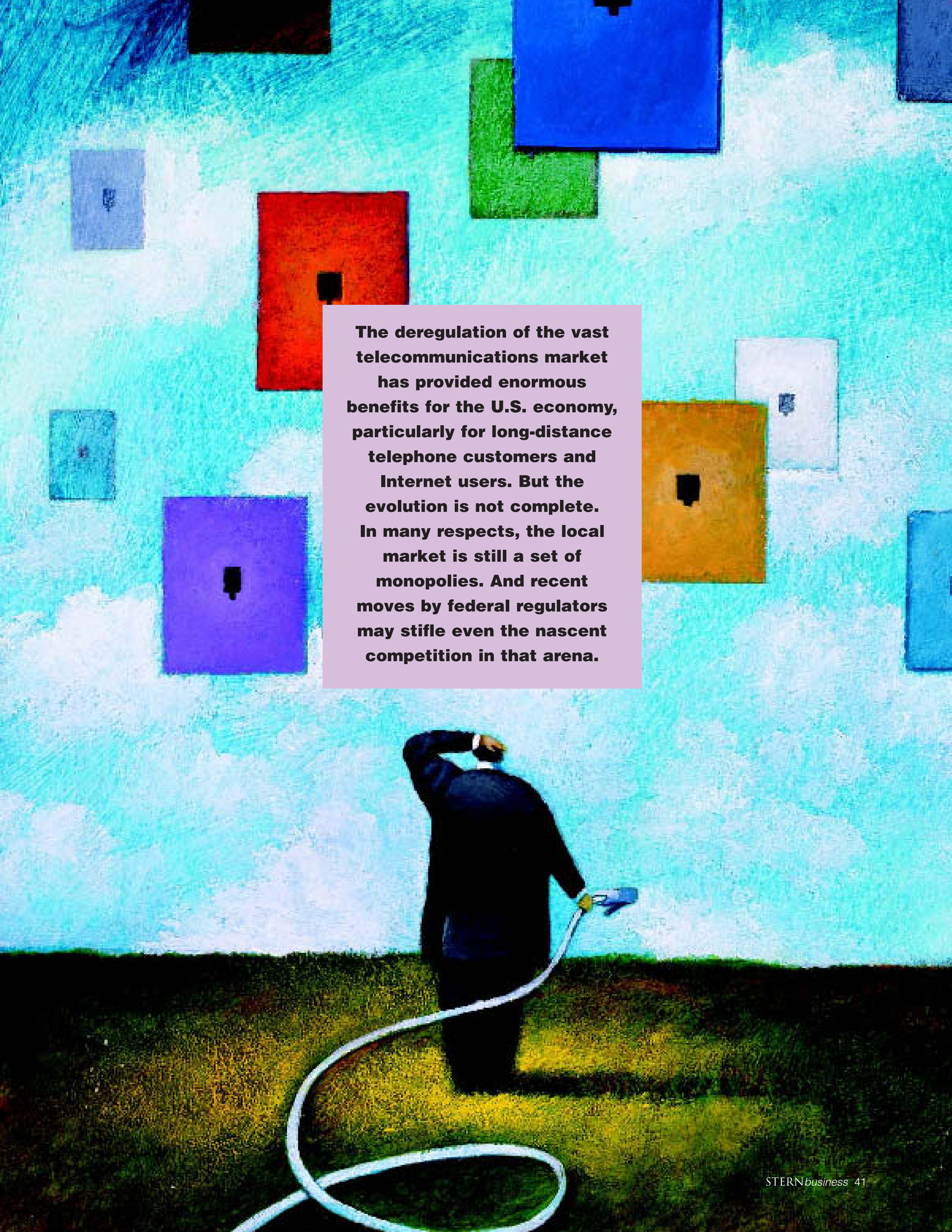
If a service requires components A and B, but only the A market is competitive while the B market is monopolized, consumers will never receive the full benefits of innovation. Instead the company that monopolizes the B market will reap these benefits. Unfortunately, in the telecommunications sector, while the long-distance market is effectively competitive, the local market is not. And this state of affairs represents a failure on the part of regulators.

There are three crucial requirements necessary to expand, enhance, and maximize competition. The first crucial requirement is to create new markets, whenever possible. But what can be done for markets or components where it does not seem possible or economically feasible to have effective competition in the foreseeable future? This state of affairs accurately describes local telecommunications markets. These markets, in the absence of regulatory intervention, remain monopolies for the "Baby Bells" that were created by the breakup of AT&T in 1981. If left unregulated, the monopolists in these markets would effectively restrict sales and reduce the variety of offerings. And even worse, since long-distance calls pass through local wires in their origination and termination, local monopolists would also absorb the benefits that consumers could get from long distance. It is evident therefore that the monopoly power of the incumbent local monopolists needs to be restricted and contained from spilling over and distorting other markets. This is the second crucial requirement.

The third requirement is the creation, fostering, and enhancement of competition whenever possible, even if that means occasionally creating artificial environments that imitate competitive markets. These artificial environments can serve as incubators, fostering the conditions that help competition flourish over time. The way that long-distance service developed in the past 20 years provides an excellent example of this theory working in practice.

Competitive Balance

The long-distance market has been the big success story in telecommunications in the past quarter-century. Consumers have benefited tremendously from the long-distance competition that started with the breakup of AT&T in 1981. Several competitors, such as MCI, created their own networks, and hundreds of



The deregulation of the vast telecommunications market has provided enormous benefits for the U.S. economy, particularly for long-distance telephone customers and Internet users. But the evolution is not complete. In many respects, the local market is still a set of monopolies. And recent moves by federal regulators may stifle even the nascent competition in that arena.

resellers entered the field. In the 22 years since deregulation, prices of long-distance calls have decreased by a factor of five to 10. Today, they are falling at an annual rate of between 10 and 20 percent. Low long-distance prices, especially for bulk data transmission, have allowed the Internet to grow and become both ubiquitous and affordable.

But the success of competition in long distance service was not immediate. For several years, entrants did not have their own networks, and were simply reselling long-distance minutes they bought in bulk from AT&T. Regulators created an environment in which AT&T was required to sell in bulk, and in which AT&T was forced to allow entrants such as MCI and Sprint to interconnect with the AT&T network. The regulators forward-looking policies ultimately delivered remarkable benefits to consumers as long-distance providers aggressively cut prices to gain market share.

In contrast to the overwhelming success of competition in long distance, competition in local service ranged from minimal to lukewarm for a number of years. Since the beginning of 2002, competition in local service has increased significantly. However, some federal telecommunications regulators, including FCC Chairman Michael Powell, seem intent on changing regulations in ways that are likely to eliminate competition. And regulators have already taken steps that strengthen the market power of incumbent monopolists in the provision of high bandwidth (broadband) Internet services. The immediate consequence will be price increases in broadband Internet service.

But why not replicate the long-distance success story in creating local competition? And does it make any sense that federal regulators are facilitating higher Internet prices when all agree that the Internet is an engine for growth?

> **"Unfortunately, in the telecommunications sector, while the long-distance market is enormously competitive, the local market is not. And this state of affairs represents a failure on the part of regulators."**

Congressional Intent

To understand these issues we need to go back seven years. As part of an effort to jump-start competition in local telecommunications, Congress passed the Telecommunications Act of 1996 (1996 Act). Among other things, the 1996 Act required that public telecommunications networks interconnect, and that incumbent monopolists, such as Verizon, lease to entrants all parts of their local telecommunications network at cost. Entrants were to be allowed to choose which parts of the network they wanted to lease, and barriers to entry were eliminated. Broadly speaking, the key Congressional mandate to regulators was to encourage telecommunications competition in every dimension.

The 1996 Act recognized that the modern telecommunications network is a network of interconnected networks. For example, a typical long-distance call may pass through three networks. A call from New York to Los Angeles passes through the Verizon network at its origination, through AT&T in its long-distance transmission, and through PacBell's network when it terminates at its destination. This means that each one of these three networks can add to the price a consumer pays for a long-distance call. And here's the rub. Even as the long distance transmission market has become competitive, the end-to-end call can still be expensive because of its origination and termination parts. Although the origination and termination parts are small in distance (often called "the last mile" from the network to the customer's location) they can add significantly to the price of a long- distance call since they are monopolized.

The rules of network access define the success of local competition. And the Federal Communications Commission (FCC) did set up elaborate rules that define the parts of the network that can be leased, as well as the cost basis for these components. However, the rules for implementing the 1996 Act have touched off six years of litigation dealing with everything from the meaning of the word "cost" and the right measure of cost, to whether AT&T technicians installing equipment in a Verizon building can use Verizon's bathrooms. This near-constant litigation created tremendous uncertainty in the industry, delayed entry in local telecommunications markets, and contributed to the downturn of the telecommunications sector.

In the last year and a half, litigation has subsided. Moreover, as part of their efforts to gain regulatory approval to provide long-distance service, local telephone monopolists such as Verizon effectively lowered prices for leases on parts of their networks. As a result, competition in local telecommunications mushroomed. Responding to better prices and plans with a better assortment of services, millions of customers changed providers of local service. Slowly, but surely, the model established by Congress for telecommunications is working. Consumers (and businesses) are saving money, have more choices in providers, and can choose from a wider range of more innovative services.

The past few years have been not been particularly good ones for the telecommunications industry. The dot-com bubble popped, and major players like WorldCom and Global Crossing went bankrupt. But amid the gloom, the emerging competition in local telecommunications should have been heralded as a big success story and embraced by regulators. Instead, in February 2003, the FCC upheld the network access rules that fostered local competition by the thinnest of margins – a 3-2 vote. Significantly, FCC Chairman Michael Powell was in the minority – i.e. he lobbied against the pro-competitive rules. Now the FCC is considering starting hearings aimed in re-evaluating (read: increasing) the cost at which the local telecommunications networks are to be made available for leases. Such a cost increase would likely stop the emerging local competition in its tracks.

Logging On

Competition in local telecommunications is also essential for the inexpensive provision of broadband Internet connections to small businesses and residences. The 1996 Act allowed entrants, such as Covad, to lease and use high frequencies of the copper wires of local networks to provide broadband Internet service. This Digital Subscriber Loop (DSL) service became one of the two most popular ways for a broadband Internet connection. The other Internet broadband connection is through a cable modem that uses the coaxial cable of cable television.

Broadband data connections to the Internet are crucial for Internet growth. Most websites' content and structure are optimized for a broadband connection. The transfer of video, pictures, and digitized music are extremely difficult without such a high-speed connection. Broadband penetration is growing. But despite the wide recognition of the importance of the Internet as a major engine of growth, the United States lags behind a number of countries, including South Korea and Hong Kong, in broadband Internet connections.

Under the circumstances, one would have expected that regulators would try to lower the price of broadband Internet connections, and thus encourage more rapid expansion of the Internet. Here again, the FCC came up short. In February 2003, the FCC decided to allow incumbent monopolists of local telecommunications networks to charge any price they want for the portion of the network used to provide DSL service. The immediate consequence will be higher Internet connectivity prices and slower growth of the Internet in the U.S. This is possibly the most damaging decision for the Internet that the FCC could take short of formally imposing regulation on the Internet.

In its decision on broadband last February and in its general approach to telecommunications, today's FCC seems to disregard the importance of fostering competition in local telecommunications, as well as the benefits that competition will bring. It seems as if the FCC has lost its faith that the success of competition in long distance can be replicated in local voice telecommunications as well as in broadband Internet service. Even worse the FCC seems to have forgotten that Congress through the 1996 Act directed it to encourage competition.

The results of the loss of faith in competition are likely to be highly detrimental to the U.S. economy. Consumers have benefited and will continue to benefit from the opening of the local telecommunications network to the tune of tens of billions of dollars. But changes contemplated by the FCC in the network access rules or the methodology of cost calculation can easily wipe out these benefits. Even a tiny reduction in the growth of the U.S. economy precipitated by a slowing of the growth of the Internet as a result of the February 2003 FCC decision will result in an additional tens of billions of losses.

"Despite the wide recognition of the importance of the Internet as a major engine of growth, the United States lags behind a number of countries, including South Korea and Hong Kong, in broadband Internet"

It is truly ironic that while the European Union, as well as a large number of countries around the world, have fully subscribed to the competitive vision of telecommunications as first understood, tried, and proved successful in the U.S., the federal U.S. regulator is abandoning it.

The competitive vision for the telecommunications sector was and is correct. Time will show that those who adopt it will end up with more efficient telecommunications infrastructure, lower prices, more abundant choice of services, and higher economic growth. It is a pity that the U.S., having led the way, may now be on the verge of reversing course.

NICHOLAS ECONOMIDES *is professor of economics at NYU Stern. His website on the Economics of Networks can be seen at http://www.stern.nyu.edu/networks.*

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Making It

By **Daniel Gross**

ILLUSTRATION BY STEVEN SALERNO

In January 2003, President Bush traveled to a trucking firm in St. Louis, Missouri, to promote his economic program. But his advance staff encountered a problem. All the boxes of goods waiting to be shipped bore block letters reading "Made in China." An aide quickly covered up the offending words with "Made in U.S.A." signs.

This bit of legerdemain highlights a long-term trend. Even in the nation's industrial heartland, it is getting harder and harder, relatively speaking, to find U.S. made goods – and the workers who make them. In 1940, when the U.S. was poised to become the world's Arsenal of Democracy, about 27 percent of the U.S. workforce was engaged in manufacturing. By 2002, as the chart shows, that proportion slumped to less than 12 percent.

Year	Manufacturing Employees	Percentage of Total Non-farm Payrolls
1940	10.09	27.56
1950	14.01	30.09
1960	15.43	28.4
1970	17.84	25.12
1980	18.73	20.06
1990	17.69	16
2000	17.26	13.09
2001	16.44	12.47
2002	15.3	11.73

Source: United States. Bureau of Labor Statistics

To the unions that successfully organized manufacturers, and to manufacturing advocacy groups, these are foreboding statistics. In June, The Council of Manufacturing Associations released a report by economist Joel Popkin. It argued that if the U.S. manufacturing complex slips below a critical mass, the nation's economic, technological and political might would be sorely eroded.

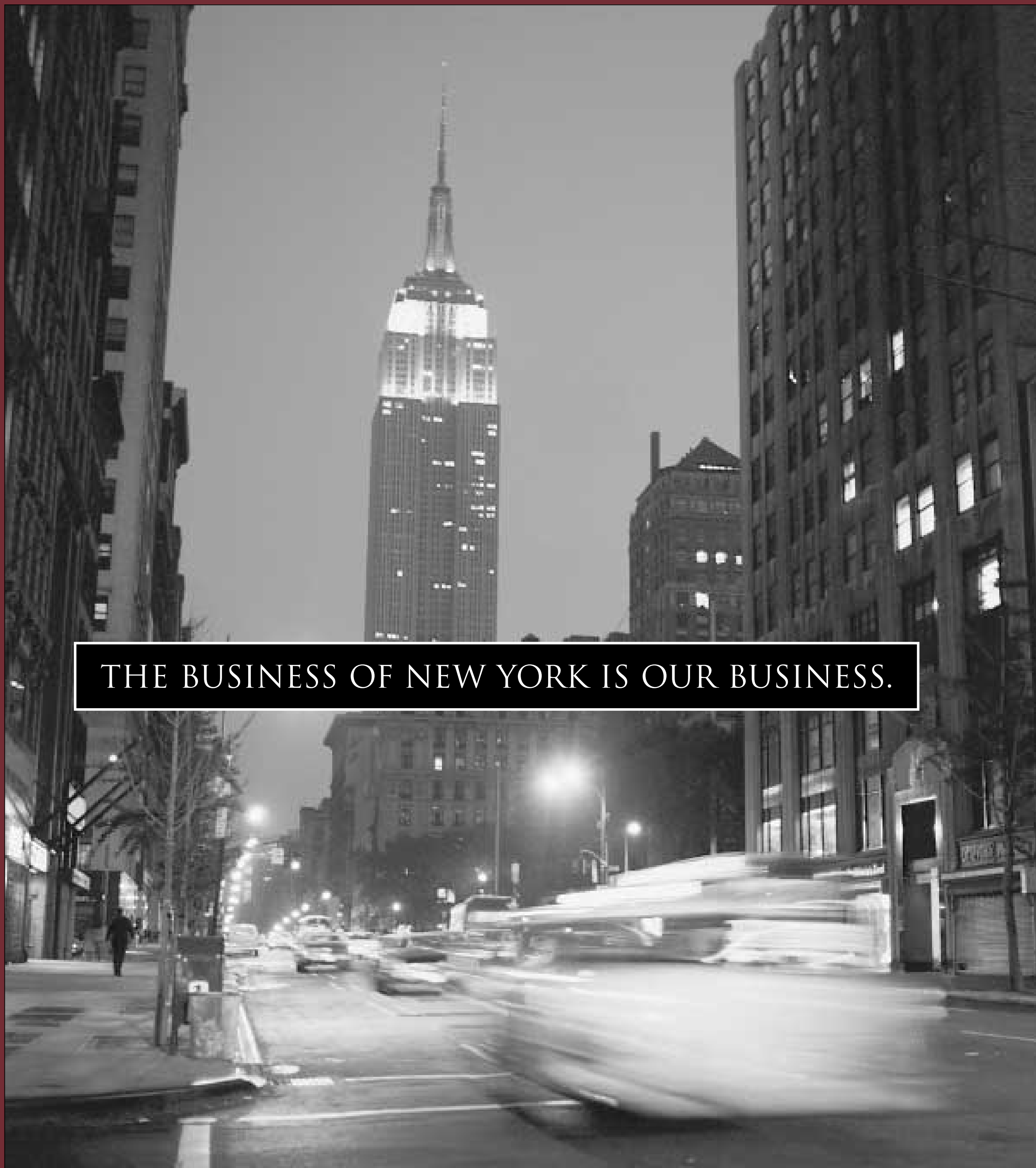
"Even in the nation's industrial heartland, it is getting harder and harder, relatively speaking, to find U.S. made goods – and the workers who make them."

To be sure, the decline in manufacturing has hurt many areas of the country. Amtrak passengers traveling from New York to Washington can't help but notice the poignant sign in southern New Jersey: "Trenton Makes, The World Takes." But the industrial revolution, having transformed the U.S. from a nation of farmers into an urbanized, highly-productive industrial and service economy, has found its way to Mexico, and China. And as evident by our mammoth trade deficits, it's the world that makes while Trenton and the rest of the U.S. take.

But are we collectively worse off for this development? Manufacturing's losses have been the service sector's gains. And, by and large, service jobs are less dangerous and offer better working conditions than the steel mills and auto plants of decades past did. A perusal of historian Douglas Brinkley's new history of Ford, *Wheels for the World: Henry Ford, His Company, and a Century of Progress, 1903-2003* (Viking) paints work on the Ford assembly lines as tedious, mind-numbing – an ergonomic nightmare. Meanwhile, measures like home ownership, equity ownership, productivity, income, and economic growth have continued to rise steadily over the past 60 years, even as manufacturing jobs declined.

Henry Ford, whose fierce desire to escape the drudgery of farm work led him to invent a car for the masses and forge a new manufacturing culture, was himself wistful about the economic paradigm of his youth. The creator of the nation's car culture spent portions of his later years creating Greenfield Village – a scrupulously detailed recreation of a late 19th-century town to which his marvelous invention had yet to arrive.

DANIEL GROSS *is editor of* STERN*business.*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