



in|vise

MAGAZINE

A PUBLICATION OF NYSE EURONEXT

» CLOUD CONTROL

How companies are
leveraging NetSuite's
Web-based software
to simplify and save

Vale CEO Roger Agnelli
takes technology — and
tenacity — underground

High-tech innovations
make corporate boards
more efficient

The semiconductor
industry diversifies

NetSuite CEO
Zach Nelson



"Cloud computing [is] a business and personal revolution."

— Zach Nelson,
president and CEO, NetSuite

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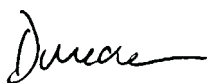
HOW IS TECHNOLOGY changing business and markets? That is the question *nyse magazine* sets out to answer in our first special technology issue. From cloud computing and social networking to real-time information sharing and collaboration, a technology revolution is under way, and NYSE Euronext companies, including NetSuite, the subject of this issue's cover story, are at its forefront. We are proud to be home to some 550 technology, media and telecommunications, or TMT, companies with a combined market capitalization of \$3.4 trillion. Our Special Report beginning on page 18 features many of these companies, and this issue's Sector Spotlight and CEO Q&A with Carlo Bozotti, CEO of STMicroelectronics, show our strength in semiconductor listings, an important TMT subsector. Recent TMT listings include Inphi, Sensata Technologies, RealD and IntraLinks Holdings (see pages 23 and 35). Our new Across the Board department, which tackles boardroom topics, examines the growing role of technology when it comes to corporate governance.

Technology is a driving force behind the rapid pace of change in global capital markets. NYSE Euronext has invested more in technology than any other global exchange, and we have strategically expanded our technology services business, a growing source of new revenue for us. As you will read about in the Q&A with President Dominique Cerutti (see page 42), a number of ground-breaking projects, including our Universal Trading Platform, signal our commitment to leadership in financial technology and innovation.

This momentum extends to our listings business. We enjoy an unrivaled community of great companies from around the world, and recent listings put even more distance between us and the competition. In addition to the TMT listings noted above, we also had a strong year for listings from China, with a record 22 IPOs raising a combined \$2.7 billion on the NYSE last year. And General Motors returned via its oversubscribed IPO, which was the largest in the U.S. in 2010 and one of the largest in global history.

The success of the GM transaction — and of the many others in 2010 — reminds us that capital markets have reopened. Yet we believe further steps can be taken to ensure more companies have access to capital. That is one of the reasons why we have expanded our issuer advocacy efforts in the U.S. and Europe, which you will learn more about in our new back-page column, The Advocate. We look forward to continuing to represent our issuers — as well as investors — as we leverage our technology, market expertise and ever-expanding global network to create new growth opportunities around the world.

Sincerely,




QUITE A RIDE General Motors CEO Dan Akerson, in a 2011 Chevy Camaro convertible with NYSE Euronext CEO Duncan Niederauer, celebrates GM's Nov. 18 return to the NYSE and completion of the year's largest U.S. share offering.

"TECHNOLOGY IS A DRIVING FORCE BEHIND THE RAPID PACE OF CHANGE IN GLOBAL CAPITAL MARKETS."

DUNCAN'S TOP FIVE

MARKET TREND The high IPO activity in late 2010 is a precursor to a better 2011.

PEER TO PEER Our Government Affairs teams on both sides of the Atlantic are active on a number of legislative initiatives, providing a voice for the issuer community.

NYSE EURONEXT INITIATIVE By third-quarter 2011, NYSE Technologies will introduce a consolidated tape in Europe, and consolidated U.S. market data will be delivered in less than one-thousandth of a second — 1,000 times faster than three years ago.

MEMORABLE QUOTE "Cloud computing is literally the final great computing architecture." — NetSuite CEO Zach Nelson

RECENT TRIP To Poland to participate in the historic IPO of the Warsaw Stock Exchange (see page 43 for more on our strategic partnership).

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain articles about NYSE Euronext in this magazine may contain forward-looking statements, including forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, but are not limited to, statements concerning NYSE Euronext's plans, objectives, expectations and intentions and other statements that are not historical or current facts. Forward-looking statements are based on NYSE Euronext's current expectations and involve risks and uncertainties that could cause ac-

tual results to differ materially from those expressed or implied in such forward-looking statements. Factors that could cause NYSE Euronext's results to differ materially from current expectations include, but are not limited to: NYSE Euronext's ability to implement its strategic initiatives; economic, political and market conditions and fluctuations; government and industry regulation; interest-rate risk and U.S. and global competition; and other factors detailed in NYSE Euronext's reference document for 2008 ("document de référence") filed with the French Autorité des Marchés Financiers (registered on April 28, 2009 under No. R. 09-031),

2009 Annual Report on Form 10-K and other periodic reports filed with the U.S. Securities and Exchange Commission or the French Autorité des Marchés Financiers. In addition, these statements are based on a number of assumptions that are subject to change. Accordingly, actual results may be materially higher or lower than those projected. The inclusion of such projections herein should not be regarded as a representation by NYSE Euronext that the projections will prove to be correct. Articles in this magazine speak only as of Dec. 15, 2010. NYSE Euronext disclaims any duty to update the information herein.

XEROX CORP. (XRX) blazes new trails online. **ON THE WEB**

DICE HOLDINGS INC. (DHX) innovates tech recruitment.

POLYGON GROUP (NYSE Alternext: ALPOL) goes digital.

upfront



Proterra's EcoRide™ BE35 bus is all electric.

Electric Avenue

Company: UQM Technologies, a Longmont, Colo.-based developer of electric motors and inverters for electric and hybrid electric vehicles

Market Cap: \$84.7 million*

The city bus might seem an unlikely vehicle to lead the way toward a greener public-transportation future — but a new motor developed by **UQM TECHNOLOGIES INC.** (NYSE Amex: UQM) could help make it happen. In September, UQM announced that the 201-horsepower PowerPhase 150 will pro-

vide the quiet, carbon-free *oomph* for a new 68-passenger EcoRide™ BE35 coach made by privately held Proterra Inc. “This is a game changer,” says UQM President and CEO Eric Ridenour. “Much lower consumption of energy, no emissions — it’s pure electric.”

The bus can be fully charged in less than 10 minutes and will run for three

hours, with peak diesel-equivalent fuel efficiency of more than 20 mpg — five times that of a standard bus, according to Proterra, which says it sought to keep the vehicle as light as possible. Its body and chassis are built of a fiberglass-balsa wood composite, and the complete bus is about 15 percent lighter than a conventional bus, Proterra reports, while its lifetime increases more than 50 percent.

Ridenour says this bus is ideal for the UQM motor. “For the amount of power and torque this motor provides, it’s a very compact system,” he explains, “power-dense and highly efficient.” — *Adam Risman*

You’ve Got (Digital) Mail

Company: Pitney Bowes, a Stamford, Conn.-based provider of physical and digital communications technologies

Market Cap: \$4.9 billion

PITNEY BOWES INC. (PBI), which introduced the first commercial postage meter in 1920, says it is delivering itself new business by digitizing its clients’ physical mail. This past September, Pitney Bowes Management Services, or PBMS (a subsidiary of PBI), debuted the Pitney Bowes Digital Mail Solution.

Vicki O’Meara, president of PBMS, explains that, in a secure, monitored area, the system scans physical mail into a database; the intended recipient is



UQM'S POWERPHASE 150 ELECTRIC MOTOR DELIVERS 201 HORSEPOWER.

then sent an e-mail with a link to images of the documents. After viewing them, the recipient has several options, including providing access for others to view documents and requesting delivery of the original. Digital Mail Solution trumps direct e-mail delivery, O'Meara says, because as a hosted service it eliminates the possibility of large files overwhelming companies' IT infrastructure. "This solution is unique over other digital-mail offerings," she says, "in that it integrates directly into our customers' e-mail systems, enabling them to receive digital mail in an interface they're familiar with." — *Chris Warren*

Vacation Sensation

Company: Wyndham Worldwide, a Parsippany, N.J.-based global hospitality company specializing in hotels, vacation homes and vacation rentals

Market Cap: \$5.3 billion

If anticipation is half the fun of a vacation, **WYNDHAM WORLDWIDE CORP.** (WYN) aims to make customers positively giddy, employing a host of digital technologies to entice new clients into RCI, its vacation-exchange subsidiary. In late 2009, the company launched RCI TV, an online video network (accessed through RCI.com) that answers customers' questions and lets them view top property and resort footage.



RCI offers interactive customer service.

In 2010, Wyndham says, RCI debuted apps for the iPhone and iPod touch to go along with its YouTube channel (youtube.com/rcitimeshare). "These new resources enhance trip planning for savvy travelers who tweet, text and blog, and allow users to share vacation experiences with their social networks," says Wyndham Chairman and CEO Stephen P. Holmes.

They also boost Wyndham's bottom line by driving customers who might otherwise book their trips on the phone with a paid consultant to the company's online reservation system, he adds. In the third quarter of 2010, 30 percent of RCI vacation reservations were made online — up from 23 percent in the same period the year before — and, to date, more than 1 million viewers have tuned in to RCI TV, the company reports. That's a lot of anticipation. — *Rebecca McReynolds*

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THE PERCENTAGE OF RCI VACATION RESERVATIONS THAT WERE MADE ONLINE IN THE THIRD QUARTER OF 2010, UP FROM JUST 23 PERCENT IN THE SAME PERIOD THE YEAR BEFORE.

Full Speed Ahead

Company: Option, a Belgium-based wireless-technology developer

Market Cap: €49.5 million (US\$66.2 million)

"We get approached by companies that want to integrate 3G modems in various ways into their devices," says Martin Croome, vice president for marketing at **OPTION NV** (NYSE Euronext: OPTI). One such company is Japanese electronics manufacturer Pioneer Corp., which says it recently added one of Option's new iCON wireless USB 3G modems to its car navigation system, giving drivers access to gas station locations, fuel prices, parking availability and local-event information.

Croome notes that Option is also eyeing the auto industry's move toward installation in cars of "black boxes" that could serve as antitheft devices or fleet-management systems. A true breakthrough, though, could come with eCall, a project now being mulled by the European Commission that would mandate equipping every vehicle in the EU with GPS/3G units linked to local emergency services. Little wonder that the company says it is reviewing its approach to the automotive market. — *John McLaughlin*



The iCON XY wireless USB 3G modem from Option

CORPORATE ID
[NAME THIS COMPANY]



- In the 1920s, auto-body paint shops were able to use this company's revolutionary new waterproof sandpaper.
- A scientist accidentally developed a light adhesive in 1968 that led to one of this company's most popular products.
- A year later, U.S. astronauts walked on the moon wearing boots with soles made of this company's synthetic material.
- The Academy of Motion Picture Arts and Sciences gave this company an award in 1985 for developing a magnetic film that enhanced audio capabilities.

ALL CLUES PROVIDED BY THE COMPANY. SEE ANSWER AT [NYSEMAGAZINE.COM/CORPORATEID](http://nysemagazine.com/corporateid).

The Right Direction

Company: TomTom, an Amsterdam-based maker of location and navigation solutions

Market Cap: €1.7 billion (US\$2.3 billion)

TOMTOM NV (NYSE Euronext: TOM2) has long been a pioneer of in-car navigation and GPS technology, but free and low-cost smartphone apps appeared to present a challenge to that business model. So, TomTom says, it is piloting itself through an increasingly crowded marketplace, seeking the best way forward via a host of new products.

TomTom reports it has been working with automakers **RENAULT SA** (NYSE Euronext: RNO), Fiat Group Automobiles SpA and Mazda Motor Corp. to have its technology become part of car navigation systems installed on the factory floor, and it recently partnered with **SONY CORP.** (SNE) to develop a car stereo system with built-in TomTom navigation software. It says it's also bulking up its own iPhone app to be able to, among other things, enable drivers to navigate to a destination in a photo that has been "geotagged" with its location.

Detailed information to help harried motorists avoid traffic jams is another of the company's areas of focus. "We're about driving behavior, and we want to deliver the best navigation experience to our users," says Alain De Taeye, a member of TomTom's management board. In the U.S., the company offers historical American-city traffic data paired with real-time traffic pulled through radio feeds on many of its models. In Europe, TomTom offers live traffic reports based on information transmitted in real time by TomTom devices. This service has not yet been announced for the U.S. market. Says De Taeye: "Connectivity is pivotal to us." — *John R. Quain*

Visionary Concept

Company: eMagin, an organic light-emitting diode, or OLED, microdisplay technology and personal display systems company based in Bellevue, Wash.

Market Cap: \$93.6 million

At the center of three recently awarded contracts to upgrade the U.S. Army's Enhanced Night Vision Goggle, or ENVG, is **EMAGIN CORP.'s** (NYSE Amex: EMAN) latest organic light-emitting diode microdisplay, the OLED-XL. Containing thin layers of carbon-based molecules, the mercury-free display produces light in each pixel when an electric current is present, without using a backlight. The end result is a virtual image comparable in quality

to that of a high-resolution TV, explains eMagin CEO and President Andrew Sculley.

The OLED-XL uses significantly less energy than a liquid crystal display, or LCD, Sculley says, which makes it the ideal fit for night vision applications: "The combination of power efficiency, high-contrast imagery and functionality across a broad temperature range is what the night vision companies are looking for." — *Adam Risman*

THE ADVANTAGES OF OLED OVER LCD

- » Refreshes pixels 1,000 times faster, decreasing lagging imagery
- » Has a wider temperature range, eliminating any need to heat or cool the display
- » Uses 80 percent less power, increasing battery life
- » Projects a 160-degree field of view — 265 percent larger than an LCD
- » Creates a contrast ratio 165 times higher than that of an LCD

SOURCE: EMAGIN CORP.

"Military personnel want to see in the shadows, therefore they want high contrast."
— *eMagin CEO Andrew Sculley*



Read All About It

Company: AOL, a New York City-based global Web-services company

Market Cap: \$2.7 billion

All politics might be local, but all news — in an era of shrinking media budgets, staff cutbacks and dying small-town papers — increasingly isn't. To help fill the local-news vacuum, Patch Media Corp., owned by **AOL INC.** (AOL), created a "community-specific news and information platform" and has already launched more than 500 Websites.

AOL says that through Patch it has built a new approach to community journalism that's cost-effective without a commensurate decline in quality. "We hire professional, experienced journalists," says Warren Webster, president of Patch Media. "We liken them to 'walking newsrooms,' because they're armed with laptops, iPhones, digital and video cameras and police scanners. They can publish from anywhere at any time."

Patch's focus so far has been municipalities with between 15,000 and 75,000 residents — places chosen according to a 59-point Patch-devised algorithm that weighs standard demographic information (household income, voter participation) along with more subjective categories (the vibrancy of the local business community, how "engaged" residents are) to determine a town's thirst for local news.

The business model not only eschews most of the highest fixed costs of a typical news operation — printing, distribution, office space — but it's been warmly embraced, Webster says. "We've gotten over 1,000 e-mails, unsolicited, from 42 states and 12 foreign countries saying, 'We want Patch in our community,'" he adds. "People are starving for local information." — *Chris Warren*



the company's electricity ventures in the Americas: "If you can actually know what's occurring through the power grid, you can make adjustments ahead of problems."

Great news for consumers — and the environment. North American utilities that have implemented similar systems have seen an efficiency-driven reduction in daily power consumption of between 3 percent and 5 percent — "without the customer having to do a thing," Munday says. — *Brian Dawson*

The Color of Savings

Company: Fabrinet, a Thailand-based manufacturer of optical components, lasers and sensors

Market Cap: \$711.4 million

One reason companies are sometimes loath to make their business practices more environmentally friendly is that going green often costs a lot of green. Find efficient ways to make the transformation a money-saver, and it suddenly makes sense for both the environment and the bottom line.

Such is the case with **FABRINET** (FN), whose recently developed Green Stream Mapping system purges internal waste and inefficiency from its manufacturing, according to the company. The technology entails examining in detail every step of a manufacturing process — its time cycle and inherent waste and inefficiency. It then "expands this process by adding analysis of the inputs and outputs of each step that could have environmental impact," says Dr. Harpal Gill, the company's executive vice president and chief operating officer. In concert with Fabrinet's other sustainable practices, Green Stream Mapping, Gill says, has helped the company reduce its annual paper usage by 17 tons. — *Chris Warren*

Power to the People

Company: Elster Group, an Essen, Germany-based developer of smart grid technology for utilities

Market Cap: \$1.8 billion

Providing reliable, efficient, green electric power to consumers in the developing world isn't some unattainable enviro-fantasy: It's the ongoing work of **ELSTER GROUP SE** (ELT), which has smart grid installations worldwide, including an initial deployment in Ecuador. During the next few years, says Elster, which went public this past September, it will bring its EnergyAxis Smart Grid technology — meters and communications infrastructure that help smooth out supply disruptions while streamlining repairs and billing — to more than 2 million customers of Eléctrica de Guayaquil, Ecuador's state-owned utility.

Elster's EnergyAxis Smart Grid system obviates the need for unreliable "rule of thumb" troubleshooting, according to Mark Munday, president and CEO of Raleigh, N.C.-based Elster Solutions LLC, which oversees

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THE PERCENTAGE OF ELECTRICITY AND GAS CONSUMERS IN EUROPE THAT THE EU HOPES WILL BE SERVED BY SMART METERS BY 2020, PER THE THIRD EUROPEAN ENERGY LIBERALIZATION PACKAGE.

>> According to the sixth annual NYSE Euronext CEO Report, conducted in 2010, 53 percent of CEOs expect their company's technology budget to increase through calendar year 2011 — the highest percentage of any business category. Visit nysemagazine.com/ceo-report for the study's full results.



APPLYING SCIENCE

Q: *How will technological advancements affect your company's profitability through 2011 and beyond?*



WESLEY R. CARD
CEO, THE JONES GROUP (JNY)

THE COMPANY announced a name change in October that reflects its success beyond the apparel category.

MARKET CAP \$1.4 billion*

“GOING BACK more than five years, The Jones Group initiated an investment plan to create a technology platform that would provide a single-system landscape across our global enterprise — making us a more nimble organization. We were able to react quickly during the economic downturn and to changing customer requirements. We will continue to look to technology as an important focal point for maximizing our supply chain and logistics in an effort to continually improve our operational efficiency and speed to market in the face of an evolving retail industry.”



SÜREYYA CILIV
CEO, TURKCELL COMMUNICATION SERVICES AS (TKC)

THE COMPANY provides mobile voice and data services over its network to a reported 34 million subscribers in Turkey.

MARKET CAP \$14.7 billion

“IN 2009 TURKCELL GROUP invested \$1.8 billion in technology, particularly in our Turkish business. By introducing 3G to Turkey, our share of mobile Internet and service revenues increased to more than 20 percent in the third quarter of 2010, up from 16 percent in 2009. In 2010, we planned to invest around \$1.4 billion, mainly in our 3G business and Superonline's fiber-optic network, which positions us as a triple-play operator with significant growth potential while we build on our innovation capabilities via our fully owned subsidiary Turkcell Technology.”



MICHEL DE ROSEN
CEO, EUTELSAT COMMUNICATIONS (NYSE EURONEXT: ETL)

THE COMPANY is seeing greater demand for satellite capacity due to advancements in digital TV.

MARKET CAP €6 billion (US\$7.9 billion)

“EUTELSAT VIEWS TECHNOLOGY as a key feature in driving our 79 percent EBITDA margins and managing our fleet of 26 geostationary satellites that provide communications capacity for TV broadcast, data transmission and services to governments in Europe, the Middle East and Africa. Our newest satellite, KA-SAT, is optimized for consumer broadband needs and other point-to-point communications in Europe and North Africa. Continuing to invest in new satellites will be critical to Eutelsat's growth, and this is done through constant dialogue with our technology partners.”



AMY MILES
CEO, REGAL ENTERTAINMENT GROUP (REG)

THE COMPANY reports that its 6,703 screens in 540 theaters in 37 states plus D.C. attract more than 244 million moviegoers annually.

MARKET CAP \$2.3 billion

“REGAL HAS INITIATED a rapid deployment of technology to convert to digital projection. This technology expands our capacity to offer digital 3-D films and alternative content, generating additional revenues. To illustrate how we've been expediting the process, we'll install more than 1,700 digital projectors at 400 theaters by the end of 2010, making 3-D films available at more than three-quarters of our theaters. For 2011 and beyond, our studio partners are increasing production of 3-D films, which complements Regal's strategy to add availability of this premium experience.”

*All market caps as of Dec. 14, 2010

» To find out how Bozotti decides when a partnership is right, visit nysemagazine.com/STMpartners.

ON THE
WEB

**“INNOVATION IS A
CRUCIAL ELEMENT IN
EVERYTHING WE DO.
IT IS ABSOLUTELY
VITAL TO HAVE THE
RIGHT PEOPLE
IN PLACE.”**

THE FAB CONDUCTOR

Carlo Bozotti directs a worldwide orchestra of chip designers and semiconductor plants.

BY JOHN R. QUAIN

THE RESULT OF A MERGER of French and Italian semiconductor companies in 1987, **STMICROELECTRONICS NV** (STM) says it has grown, largely organically, to become one of the world's largest semiconductor companies by net revenues, which at press time were on track to exceed a combined \$10 billion in 2010. Its sophisticated semiconductors are in products such as smartphones, laptops, TV set-top boxes and cars. The company, based in Geneva, reports more than 51,000 employees, R&D centers in 10 countries and 15 main production sites. Since becoming CEO in 2005, Carlo Bozotti says, among other initiatives, he has focused on building scale and forging strategic alliances with key customers and other industry leaders. For example, ST and Ericsson have formed a 50-50 joint venture, ST-Ericsson, to develop semiconductors and platforms for mobile applications.

How important is innovation to ST? And how do you manage the process?

Innovation is a crucial element in everything we do. It is absolutely vital to have the right people in place. We have an Advanced System Technology (AST) group that focuses on future innovation. We also have a formal technology council that meets with high-level professors to systematically examine what we do and give us a formal review of our innovation processes. So, it is not just a matter of quantity but of quality, and having the right people and tools.

We focus on two major pillars: One is power applications, ranging from power management, power supplies and motor control to lighting and many applications in the automotive sector and home appliances. The other major pillar is the convergence of digital entertainment and wireless communications — what we call multimedia convergence.

In 2009, companywide, we invested almost \$2.4 billion in R&D, though because we con-

solidated our joint venture with Ericsson, the economic impact to ST was about \$1.7 billion.

Can you cite a recent example in which R&D paid off?

If I had to pick one thing this year, I'd say our MEMS [micro-electro-mechanical systems] activity. This is micro-machining technology, and we are building everything from accelerometers, gyroscopes and compasses to pressure and motion sensors and active microphones. Outside the automotive sector, we are No. 1 in the world in MEMS, thanks to our commitment to R&D and internal manufacturing. We have miniaturized MEMS accelerometers from the size of a button to the size of a grain of rice — and dramatically lowered the cost per device, leading to their wide adoption in consumer devices such as gaming, mobile-phone, GPS and photographic applications. They are in the Nintendo Wii game console — a breakthrough product when it was introduced.

BIO FACTS

AGE 58

CEO SINCE 2005

EDUCATION Advanced degree in electronic engineering from the University of Pavia, Italy

PREVIOUS ROLES Named general manager of STMicroelectronics' Telecom Product Division in 1987; later served as director of corporate strategic marketing and key accounts, among other posts.

FAVORITE SCIENTIST Richard Feynman, winner of a Nobel Prize in Physics in 1965, who developed quantum electrodynamics — and, like Bozotti, was a musician.

What are the advantages of ST having its own fabrication plants?

Combining our expertise in design and manufacturing, we have a unique opportunity when it comes to proprietary technology. With MEMS technology, for example, it is clear that what we do in terms of manufacturing is essential to what we do in terms of design. In more general-purpose technologies, we have the advantage of using internal capacity while adjusting our outsourcing activities in changing conditions. In either case, customers want us to have two sources of supply, so that when a market is under stress, we can respond. Of course, there is a big difference between proprietary technologies, which we keep internal, and more common technologies that can be available from different sources.

Semiconductors are the bedrock of most recent tech revolutions. What's next?

The world faces three fundamental challenges: affordable health care, energy conservation and security. Growth in health care and fitness will be tremendous, and we're working with outstanding partners, like the Mayo Clinic. More technology is needed for renewable energy sources and smart grids, so we have designed micro-inverters to optimize the efficiency of solar panels and power-line modems for metering and smart grids. To address the third challenge, security, we've focused on secure micro-controllers for data protection and banking. ■



ALL SMILES:
CEO Zach Nelson
is an enthusiastic
pilot of the cloud
computing industry.

ON THE WEB To read about NetSuite's new, highly customizable platform, visit nysemagazine.com/suiteflow.

cloud control

**CEO ZACH NELSON SAYS ALL COMPANIES, BIG AND SMALL,
MUST VIRTUALIZE THEIR BUSINESS PROCESSES —
AND NETSUITE HAS THE TOOLS THEY NEED TO DO SO. >>**

BY CHRIS WARREN

PHOTOGRAPH BY JONATHAN SPRAGUE

This past November, Zach Nelson, president and CEO of San Mateo, Calif.-based **NETSUITE INC.** (N), was in Brno in the Czech Republic for the opening of the company's new cloud enterprise business suite development center, which, he points out, is Europe's first. While there, Nelson, who grew up in Omaha and attended high school in a monastery, learned about St. Thomas' Abbey, once an Augustinian monastery. "It's where Gregor Mendel did his famous genetic studies," says the bearded, bespectacled CEO. "We did our big opening event there, and I spent the whole time talking to the abbot of St. Thomas's about Mendel's work. It was pretty cool."

It should be no surprise that Nelson gets so enthusiastic about timeless, impactful ideas, like the ones that emanated from Mendel's experiments on the pea plants in his monastery garden. Nelson, speaking from a leather couch in his office, which is decorated with prints of woodcuts by a Japanese artist, a bobblehead of an Oakland A's pitcher

and a photo of Nelson at Augusta National Golf Club, says a major reason he took the CEO job at cloud computing provider NetSuite in 2002 was that it was founded on two "big ideas" in which he firmly believed.

The first was having a comprehensive software system to run all aspects of a company's business. "Most software applications are designed to run a department — accounting, sales, warehouse, manufacturing," Nelson says. "The big idea behind NetSuite was to build an application designed to run a business. Because it's one business process, not eight." According to Nelson, it's hard to tie multiple applications together in a cohesive way, and that difficulty leads to what he calls the "software hair ball." It's also extremely expensive; he says managing the hair ball can cost four or five times

just the facts

HEADQUARTERS
San Mateo, Calif.

2009 SALES
\$166.5 million

MARKET CAP
\$1.6 billion*

EMPLOYEES
1,022

LISTED SINCE
Dec. 20, 2007

*Market cap as of Dec. 14, 2010

the original cost of the applications themselves.

NetSuite's second big idea, Nelson says, was delivering its single software application over the Internet, a concept better known these days as cloud computing or software as a service — SaaS for short. *(For more on this trend, see "Tech for Tomorrow," page 18.)*

Even though Nelson contends that NetSuite has come a long way in advancing the

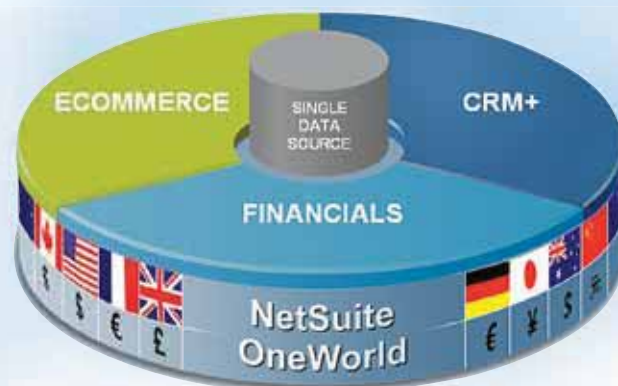
technology behind its products and continues to do so today, those twin concepts remain at the core of everything the company does. In fact, Nelson says, those two ideas are unchanged enough that he still displays in sales meetings the very same slides he used when he first came to NetSuite eight years ago.

According to COO Jim McGeever, the advantages that NetSuite customers receive are increased efficiency and cost savings. He explains that companies using NetSuite — which are charged a monthly fee that amounts to about \$100 for each individual user of the product — benefit cost-wise because they can take advantage of NetSuite's size. "We have a data center staffed by IT professionals and network and security experts," he says. "Because I have a single code base everyone is using, a single product, I get to spread my people across thousands of customers. If you were doing this yourself, you would have to have someone who monitored security, someone who does backup and database administration, and on and on. I get to leverage all of those costs as well as my hardware costs and get enormous economies of scale."

Kevin Thompson, the president and CEO of **SOLARWINDS INC.** (SWI) and a NetSuite board member, says that his company first started using NetSuite in 2006. "When we first implemented NetSuite we were doing

New World Order

NetSuite OneWorld — a complete cloud enterprise resource planning (ERP), customer relationship management and e-commerce business suite for global companies — provides comprehensive support for multicurrency, multi-subsidiary and multi-tax needs. It can be deployed across the entire company or within subsidiaries and divisions and then integrated into the existing corporate ERP system. Whichever solutions are chosen, they are provided as a single data source.



“MOST SOFTWARE APPLICATIONS ARE DESIGNED TO RUN A DEPARTMENT. THE BIG IDEA BEHIND NETSUITE WAS TO BUILD AN APPLICATION DESIGNED TO RUN A BUSINESS.”

— ZACH NELSON, CEO

\$25 million in revenue annually, and now we are doing \$170 million,” he says. “We were just in North America then, and now we are in 10 countries and many different currencies. NetSuite has allowed us to grow very quickly and make acquisitions and integrate them quickly.”

The Sky's the Limit

NetSuite was founded in 1998 by the company's current chairman and chief technology officer, Evan Goldberg, with financing from Oracle Corp. founder and CEO Larry Ellison. Early on in the company's history, says COO McGeever, NetSuite's monthly subscription-based revenue model made it difficult to make much money. “Unlike traditional software, where you get all of your money up front, you get your money over time, and the most expensive part of a subscription model is acquiring customers,” says McGeever, who points out that the company didn't become profitable until it went public in December 2007. Since then, however, things have changed dramatically. “Our profitability has almost doubled every year for the past couple of years,” McGeever says.

As far as CEO Nelson is concerned, NetSuite has a lot more future opportunity. Today, he says, the company has around 7,000 customers, most of them small and medium-size businesses that were finding it too difficult and expensive to manage the software hair ball. But these days, Nelson believes NetSuite's potential customers include what he terms the “Fortune 5 Million,” meaning companies big and small, slow growing and fast, U.S.-based and international. Nelson says that NetSuite derives 22 percent of its

revenue from outside the U.S. — a big percentage for a software company, he acknowledges, but one that still leaves room for growth.

One reason Nelson is so optimistic is that cloud computing, at least as he sees it, is one of the most important ways the Internet will change all businesses. Which is why he ends all his sales pitches with the same argument. “So, the Internet is important to your business?” he asks, a question that is always answered in the affirmative.



FOUNDER, CHAIRMAN
and Chief Technology
Officer Evan Goldberg

Then he responds with: “And your strategy for success is to buy a business software application that was written before the Internet existed?”

Besides offering companies a way to put the Internet at the heart of all their business operations, Nelson believes NetSuite's growth opportunities also lie with the global nature of business today, where companies of all sizes need to access markets everywhere. NetSuite OneWorld, a product designed for multinationals, was released in 2008 but, according to Nelson, is still in its infancy and is a major component in the company's growth strategy (see “New World Order” on previous page).

Among other things, OneWorld helps companies with multiple subsidiaries and business units located around the world manage everything with just one account, he says, handling the varying currencies, languages, tax jurisdictions and financial reporting requirements in different countries. “Historically,” the CEO explains, “running a multinational company was the hardest thing to do because you had to put physical instances of each software application everywhere — one in the U.K., one in Australia, one in Japan. It was the software hair ball on steroids. OneWorld enables companies to manage a multinational company in a single application.”

Now that SolarWinds is a global company, Thompson says, the fact that NetSuite allows him to have just one system to run operations around the world has made it very easy to handle compliance issues and to be simply



COO
Jim McGeever

“IF YOU WERE DOING THIS YOURSELF, YOU WOULD HAVE TO HAVE SOMEONE MONITORING SECURITY, SOMEONE WHO DOES BACKUP AND DATABASE ADMINISTRATION, AND ON AND ON.”

— JIM MCGEEVER, COO

and constantly updated on how each geographic region is performing. “I get automated e-mails from NetSuite every two hours showing how much we’ve sold, broken down by sales region,” he says. “I don’t even need to log in.”

“It’s a Revolution”

By appearance and demeanor, Nelson, who had been a high-level executive at Oracle, Sun Microsystems Inc. and, most recently, security technology company **MCAFFEE INC.** (MFE) before joining NetSuite, hardly comes across as a revolutionary. Easygoing and affable while simultaneously enthusiastic, he, like so many Silicon Valley executives, usually eschews a coat and tie and seems to welcome informality. His colleagues say that Nelson — who got both his bachelor’s and master’s from Stanford University after growing up with nine siblings in Nebraska — is a remarkably good communicator. “What he does really well is paint a picture of the problems his company is solving,” explains SolarWinds’ Thompson, who adds that this is a particularly important trait because many of NetSuite’s customers aren’t interested in the technology — they just want to know how NetSuite can support their business operations.

“I think cloud computing is literally the final great computing architecture,” Nelson says. “Cloud computing today changes both how businesses operate and how individuals communicate, and you see that in things like Facebook. So it’s a business and personal revolution, where just about any type of service is

going to be delivered across the ubiquitous wide area network we call the cloud.” Not only is it revolutionary, he maintains, but it’s also very much in the early stages — a fact that provides plenty more opportunity for NetSuite.

To capitalize on the opportunities, Nelson says, NetSuite spends about 15 percent of revenues on research and development. Among the most important initiatives the company is working on, the CEO says, is how to increase mobility. “You can basically run your business on an iPhone now with NetSuite,” says Nelson, who also points out that NetSuite will soon release new applications that will allow customers to do more and more advanced things, like order management, on mobile devices. Additionally, Nelson says, a third-party developer has used NetSuite’s SuiteCloud platform to develop an application that will allow customers to run NetSuite on an Android smartphone. “That’s why the platform is so important,” Nelson says. “If we haven’t gotten to it yet, one of our partners is going to.”

Goldberg says the company is also working on ways to improve social interaction within

businesses, with a soon-to-be-released product called SuiteSocial. “SuiteSocial is a way to make structured processes like shipping products to customers or working on projects more efficient and easier by using social collaboration,” he says. One use for SuiteSocial, Goldberg explains, could be in the collections process, where those at all companies involved could access and make notes on important records. “The core of it is about collaborating around records in a system, like an invoice or a sales order, and being able to add comments and communicate around it without e-mail. People have e-mail overload.”

Whether it’s in developing something like OneWorld or SuiteSocial, one of the biggest challenges for NetSuite and any other company in the technology sphere, according to Nelson, is keeping up with the pace of change. Nelson is well aware of this dilemma and says that is why he encourages every one of his employees, not just the developers, to proactively contribute ideas on product development. Says Nelson: “Technology moves too fast to have ideas coming out of just two or three heads.” ■

IN MY OWN WORDS

ZACH NELSON
PRESIDENT AND CEO
NETSUITE

» **A perfect day outside work** is taking my dog on a long walk.

» **The best management advice I ever got** was from Scott McNealy, co-founder of Sun Microsystems Inc., who told me, “Goals only limit you.”

» **My first job** was as a caddy at the Omaha Country Club at age 10.

» **My favorite book** is *Moneyball*, by Michael Lewis. I like it so much, I put Billy Beane on my board!



TECH

FOR TOMORROW

IT 2011 SPECIAL REPORT

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Welcome to the brave new IT world.

Your data and applications live on a server 3,000 miles away. You conduct business conversations on a social network. You communicate with your best customers using 140-character messages. Your CIO is more important than ever before. And you reap financial rewards from it all.

A corporate information technology revolution is under way, with process-changing and money-saving implications that some experts say could prove as dramatic as the emergence of the personal computer a generation ago. At its heart is enhanced connectivity, specifically to the Internet. The rise of cloud computing (data storage flexibility) and its companion technology, software as a service (SaaS), constitutes a sea change, says **GARTNER INC.** (IT) Senior Vice President of Research Peter Sondergaard. “We’ve sort of broken with what has been the focus of IT over the past 40 years, which is to support business operations,” he says. By contrast, if a retooled, cloud-employing IT department of tomorrow is to be successful, he says, it “will be involved in projects that link directly to revenue.” Shvetank Shah, executive director of the IT practice at research firm **THE CORPORATE EXECUTIVE BOARD CO.** (EXBD), adds, “In the next three to five years, given a number of dramatic trends — of which cloud computing is only one — the management of the IT function is going to end up looking very different.” Although Sondergaard agrees that the coordination of all the new developments in IT is at least three to five years off for most companies, he says it is important to take the first steps right now. In this Special Report, *nyse magazine* explores cloud computing and social media, examines the changing role of the CIO and offers insight into other ways that companies are leveraging technology to gain competitive advantage.

ILLUSTRATIONS BY L.INC DESIGN



TAKE TO THE SKY

BY ALEC FOEGE

Cloud computing can replace some or all of a company's physical data storage and software needs with a virtual portfolio of tools and servers.

Jason Leong vividly recalls the first time cloud computing hovered over his work life. In 2005, as vice president of network operations at the real estate investment trust **AMB PROPERTY CORP.** (AMB), he needed to find a way to connect the company's San Francisco headquarters with its rapidly expanding satellite offices in Europe and Asia. "The goal was to have very high-speed, high-performance, easily accessed applications to promote rapid growth for our business," Leong says. It was a daunting task: AMB's IT operations team was tiny — only around five employees. "The most logical step seemed to be to manage all those server resources through virtualization," he says, "where you can really consolidate not only your physical hardware but the administration of your servers."

AMB says it needed help, so it procured the services of Palo Alto-based cloud solution provider **VMWARE INC.** (VMW), which helped the company build out its virtual infrastructure starting in 2005. AMB has since expanded dramatically. Whereas its head count five years ago numbered about 300 in four countries, it now reports more than 500 employees in 15 countries. Yet its IT

department remains around the same size. And while the use of cloud services has certainly reduced AMB's need for IT professionals, Leong says, his firm's biggest IT savings have been realized through a reduction in "the amount of time you spend maintaining and troubleshooting physical hardware."

Welcome to the future of IT management.
Gartner Senior Vice President of Research

Peter Sondergaard defines cloud computing as any Internet-based IT solution that allows companies to provide shared resources, software and information to its employees' and customers' computers on a pay-as-you-go basis. In the most extreme cases, cloud services can replace all of a company's physical data storage and software needs with a virtual portfolio of remotely based tools

FAQ

What will be the most important IT trend of 2011?

The IT department as revenue generator, according to Peter Sondergaard, senior vice president of research at Gartner. As IT's role as operational troubleshooter wanes, CIOs will be expected to contribute to a company's growth strategy and revenue forecasts.

ASK THE ACCOUNTANT

What are the financial advantages of cloud computing?

Cloud computing can convert a large up-front IT capital expense into a consistent, monthly operational expense, but that alone would not generally affect the income statement much, according to Erik Asgeirsson, chief executive and president of CPA2Biz, a subsidiary of the American

Institute of Certified Public Accountants. The primary financial advantages, he says, lie in the lower costs that a cloud provider can obtain and in avoiding large initial cash outlays for equipment and software licenses. "Companies will receive improved service at a lower cost by using a cloud-based

provider with an annual all-in-one fee contract," Asgeirsson says. "This allows these companies to optimize expenses and cash flow and also to reduce financial risk by eliminating the chance of a write-off of unamortized software licenses and equipment related to any future application switch."

A collage of business-related silhouettes and abstract shapes in blue and orange tones. The image features several silhouettes of people in business attire, including a man and a woman shaking hands, a man presenting to a group, and a man sitting at a desk. The background is composed of various geometric shapes, including circles and triangles, in shades of blue, orange, and grey. The overall composition is modern and professional.

and servers. But for most companies that use such services right now, the cloud is part of a mixed IT strategy that integrates existing physical infrastructure with an expanding range of storage and productivity solutions that live together in the digital ether. Regardless of how a company employs cloud computing, it is a competitive advantage, says Sondergaard, and companies that ignore this technology do so at their own peril.

Yet for most businesses, especially large ones, adapting to this new approach to

IT deployment is a dramatic and sometimes painful change. According to Ric Telford, vice president of cloud services at **IBM CORP.** (IBM), cloud computing “is very different from the way large companies have delivered IT in the past.” IBM’s latest cloud solutions, Telford says, provide efficient and rapid Internet-based resources — including additional data storage capacity, software updates and up-to-the-minute information sources — along with technical help and operational advice.

The disruptive nature of moving into the cloud varies, depending on the route a company takes. Many large, tech-centered corporations, such as IBM and **HEWLETT-PACKARD CO.** (HPQ), have constructed and maintained their own IT universes for more than a decade; such self-contained Internet universes are known as “private clouds.” A “public cloud” can be defined as an Internet-based universe in which the customer owns and operates none of the physical assets being used, according to IBM’s Telford.

Chuck Hollis, global marketing chief technology officer for information infrastructure technology and solutions provider **EMC CORP.** (EMC), says companies have many reasons to adopt cloud technology. “We’ve got a three-phase model,” says Hollis. “The first phase is cost takeout: Take the applications that are really inefficient and run them on cloud technology. In the second phase, take the name-brand applications and run them on the cloud to achieve higher service levels and better security. The third phase is IT as a service — and there it’s more about speed and agility.”

In many cases, industries are using cloud computing to solve problems unique to their sector. Health care is one example. “Health-care providers are looking not

FAQ

How easy is it to switch cloud providers?

It should be easier than switching traditional IT applications, according to Brian Byun, vice president and general manager of cloud applications and services at VMware. The best cloud vendors design their systems with maximum portability.

only to cut costs but to improve what they can do,” says IBM’s Telford. To that end, IBM recently launched a cloud platform for ActiveHealth Management, a subsidiary of **AETNA INC.** (AET), that gives physicians and patients access to information from multiple sources without having to invest in new technological infrastructure. “And once you have all that information in one place in the cloud,” Telford says, “you can do analytics on it.”

Financial services firms are well established in their use of cloud environments, says Ann Park, business development director of the French IT firm **SOPRA GROUP** (NYSE Euronext: SOP). Cloud techniques play a key role in handling the complexity of regulatory reporting. Using its Evolan Loans software, Sopra is helping an international bank consolidate its lending back offices to operate within a private cloud, thus managing language, regulatory and currency challenges.

But what of the chance that all the forecasts are wrong? What if the long-predicted clouds never appear? Not likely, says Steve Dietch, vice president of marketing for HP networking at Hewlett-Packard. “The IT industry loves hype and roller-coaster rides with technology,” he says, “but this is much more, and it will establish itself as a fundamental way to source and consume IT services going forward.” ■

5 THINGS Your CIO Wants You to Know Right Now

IMPLEMENTING cloud computing will not automatically reduce the IT budget. But it will give the advantage of flexibility and continual access to the latest technologies.

TECH PLANNING will now be measured in months rather than years. Technology has drastically increased the rate at which companies can add data capacity and deploy new software solutions.

INCREMENTAL CHANGE is not the way to go. It’s best to dedicate one part of the organization to make the full transformation to cloud computing and virtualization, and then use it as a template for other divisions.


DON'T BE AFRAID to go public. Today’s public cloud is more secure than yesterday’s noncloud applications.

ACT NOW. Your competitors do, and they will pass you by if you don’t.

SOURCE: CHUCK HOLLIS, GLOBAL MARKETING CTO, EMC CORP.

HOW IT WORKS





THE VIRTUAL TOOLBOX

BY ALEC FOEGE

The software and hardware designed for use in the clouds is making businesses faster and more flexible.

As early as 2002, Filippo Passerini, CIO of **THE PROCTER & GAMBLE CO.** (PG), was advocating that the packaged-goods giant implement real-time business tools and increase its use of virtualization. At the time, he says, designing a package for, say, a new laundry detergent took weeks, and if consumer focus groups rejected it, the designers were back at square one. So he helped to introduce tools capable of creating a product package that can be displayed on a virtual grocery-store shelf next to competitors' products for P&G business units around the world and consumers to critique simultaneously. "We don't create physical mock-ups anymore for 80 percent of our business," Passerini says, "and we have reduced the cycle times from several weeks down to days or hours."

While P&G owns its virtualization and real-time business tools, other companies essentially rent them. J. Andrew Damico, president and CEO of **INTRALINKS HOLDINGS INC.** (IL), a provider of cloud-based critical information exchange solutions, says IntraLinks enables its customers — which include banks and M&A firms distributing nonpublic information to investors as well as pharmaceutical companies sharing sensitive regulatory data — to exchange confidential documents with their advisers, partners, cus-

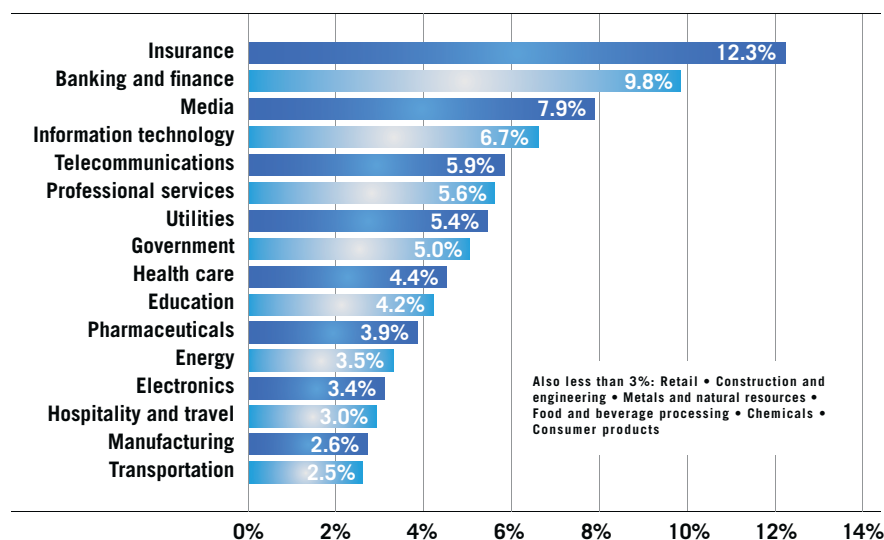
tomers and vendors in a "secure, compliant and auditable fashion." Such Web interfaces fall under the growing category of software as a service, better known in the industry as SaaS. Other cloud solution providers offer a complete tool belt's worth of virtual software, including middleware (the glue between software and servers), operating systems and management tools. Bundled together, these kinds of offerings are commonly known as infrastructure as a service, or IaaS.

Using an open-source Linux platform, **RED HAT INC.** (RHT) offers yet another approach, enabling its customers to enter the cloud incrementally, first by virtualizing their servers, then by automating a set of standardized software tools to allow self-service by both employees and customers, and finally by creating a hybrid environment of private and public cloud. "Most of the time, the public cloud is used for either specialized applications or burst capacity [when a company temporarily needs more data storage space]," explains Scott Crenshaw, vice president of Red Hat's cloud business unit. "We make this utilization of the public cloud seamless, with the same management tools as the private cloud."

As for P&G's Passerini, once the company's packaging tools were up and running, he says he went to work on installing "digital cockpits" now used by more than 38,000 employees. He explains that the cockpits are software interfaces that depict relevant, real-time information in easy-to-read visuals. "The goal is not just to look at data from last week, last month or last quarter," Passerini says. "It is also to anticipate what is *going* to happen in the business." ■

WHO'S GOT THE MOST TECH WORKERS?

IT employees as a percentage of total employees, by industry



SOURCE: GARTNER IT KEY METRICS DATA 2010

SOCIAL WORK

BY JOSH DEAN

It's an important role that didn't even exist just a few years ago. Meet Kodak's social media guru, Jennifer Cisney.



the other for Kodak's B-to-B imaging customers. And Cisney, who now has the title of chief blogger and social media manager, has led Kodak onto all of the other major social media platforms: Facebook, Twitter and YouTube. At first she alone tweeted for Kodak, but today she oversees about 20 employees with Twitter accounts. (She maintains the company's primary handle, @KodakCB, for herself.) "A big part of my job is almost acting like a newspaper editor, she says, managing all the reporters and maintaining a schedule of internal events — like product launches, firmware

"NEVER BEFORE HAS THERE BEEN SUCH A PERSONAL CONNECTION BETWEEN CUSTOMERS AND A BRAND."

updates and trade shows — and looking at what's coming up externally. For instance, on Halloween we might post and tweet and share photo tips for taking shots in low-light situations."

Kodak's aggressive moves into social media, explains Cisney, 37, were driven almost entirely by a radical shift in the company's focus. "Kodak has made this huge transformation from a film company to a digital company," she says. "But what we noticed online is that people didn't know about the new company that we have

Jennifer Cisney was in a meeting back in 2006 when **EASTMAN KODAK CO.**'s (EK) communications department decided that the company needed to start a blog. Cisney, then an information designer for Kodak's Website, had been an early adopter of blogs; she'd been writing her own since 2000. "They looked around

the room and said, 'Who knows about blogging?' " she recalls. "Everyone looked at me. I was in the right place at the right time."

Kodak launched its first blog — called "1,000 Words," featuring human interest stories about photography — in September of that year with Cisney at the helm. Two more blogs followed, one product-focused and

become. They would ask, 'Are they still making film?'"

The reality was that a generational shift was afoot, and to survive and thrive, Kodak needed to modernize not only its products but its message, Cisney says. "We moved from a generation accustomed to all those yellow film boxes to a generation that didn't know that Kodak invented the digital camera," she explains. "It was invented by an engineer at Kodak Labs."

That first blog — as well as every subsequent social media move by Kodak — has been intended to help the company enter and then stay involved in the public's digital photography conversation, Cisney says. She used to monitor all the online chatter herself, but in the past year, that became overwhelming. She says Kodak is now mentioned about 300,000 times a month in the top social media outlets. So this past spring, Kodak hired a "chief listener," whose job is to monitor everything being said online about the company. Paying attention pays off. "We're starting to do things like add features to our products because of what we hear online," Cisney explains. For instance, when Kodak launched its first pocket video camera two years ago, she noticed that people loved the product but wished it had better sound capabilities. So the product team equipped the next version with an external microphone.

"It's amazing how much customers appreciate being heard," Cisney says. "Sometimes a customer will send me a tweet and say, 'You recommended this camera and I got it and these are the pictures from my baby shower.' And I love seeing that. Never before has there been such a personal connection between customers and a brand."

Cisney is quick to point out that social media is in no way meant to replace traditional marketing. Rather, she says, "it should amplify campaigns we're doing in the traditional media." She cites the company's "So Kodak" campaign, which features commercials with

pop stars. "We tweet about it and upload YouTube videos and post on Facebook."

The next step, she says, is to merge social media with customer service. "We really feel that social support is going to be more and more important in the future," she explains. "Fewer people are going to want to pick up the phone after dropping their camera in a puddle if they can just go on Facebook or Twitter instead." The ultimate goal, she says, is for Kodak to get instantly alerted about a problem tweet or Facebook posting so that the company can assign it a case number and treat it the same as a call to technical support. "We'll be there soon," she says.

Fittingly, blogs remain at the heart of Cisney's job. Much of the activity on Twitter and Facebook is meant to redirect consumer

FAQ

Which social media websites are the most important for companies?

The big three, owing to their massive popularity, are Facebook, Twitter and YouTube, say experts, and in some industries, not having a presence on those sites by now is borderline embarrassing.

attention to Kodak's blogs, which are ever-changing. You might read posts from Cisney, an engineer, a security guard or a guest blogger from outside the company. You'll see snippets from pop stars and videos of customers using products in interesting ways. "I saw one guy tape his pocket video camera on the end of a stick and use it to record video of his gutters to see if they needed cleaning without getting on a ladder," she says.

"So we did a blog post about it."

Reflecting on her career path, Cisney says that every day in the world of social media brings something new. "I don't think anybody believes they're going to make a living out of blogging," she says. "I did." ■

C U L8R, E-MAIL

Social media is a much more productive way to communicate with colleagues.

If imitation is the sincerest form of flattery, Facebook must be blushing by now. Indeed, several IT service providers looking to create a more robust overall interoffice communications application have recently developed enterprise products that mimic Facebook's user experience. The most visible example is **SALESFORCE.COM INC.'s** (CRM) Salesforce Chatter, introduced in June 2010. "Chatter's

Facebook-inspired model, with status updates and real-time feeds, shows what's most important to you," says Salesforce.com Chief Marketing Officer Kendall Collins. "On Chatter, instead of talking about your family and photos, you share what you're working on, such as the latest deals. You also collaborate around content and follow business data or processes."

NETSUITE INC. (N) (see "Cloud Control," page 12) says it plans to roll out its own social networking application for companies, SuiteSocial, in early 2011. Employees using either SuiteSocial or Salesforce Chatter will be able to subscribe to updates not only from co-workers of choice but also from specific inventory items, invoices, customer cards and more. Now that's what we call a social network. — *Alec Foege*





BY ALEC FOEGE

THE NEW CIO

As cloud computing settles in, the chief information officer may have a smaller staff but a bigger say in setting company strategy.

Federico Genoese-Zerbi, in his role as CIO of **THE BOEING CO.**'s (BA) Commercial Airplanes and Defense, Space and Security divisions, is in charge of IT for the company's Commercial Aviation Services unit, which handles services including spare parts and all operational and maintenance services of Boeing airplanes from the moment they leave the factory. "If you look at our 787, it has literally thousands of software-loadable parts that are required to keep it flying and operating most effectively," he says.

One of his top achievements since he joined Boeing three years ago has been to help develop a SaaS cloud-based service to allow Boeing's customers — mostly commercial airlines — to service their fleets

and operate more efficiently. "We've created the capability to deliver this infrastructure to airlines through the cloud," he says, "so they don't need to stand up their own software and management systems if they don't want to."

Most experts agree that, for forward-thinking CIOs, the new IT is a once-in-a-lifetime chance to move out of the back office and possibly even into the boardroom. But perhaps the clearest indication that a revolution is afoot is that some companies report that they are observing the flow of power heading in the opposite direction. "Possibly more than CIOs coming onto the board, we're seeing business directors — the guys with the MBAs — becoming IT directors," says Ann Park, business development director at Sopra Group.

The latest IT innovations will provide different advantages for different industries, but experts agree that nearly all sectors will require a new breed of CIO. That's mainly because making enterprise technology more accessible and proactive requires a company's CIO to transition from a support role to a strategic leader, they say, just as Boeing's Genoese-Zerbi took a strategic role in serving Boeing's customer base.

"This era that appears to be on the horizon is going to yield at least six styles of what we're calling the money-making CIO," says Ken McGee, a vice president and research analyst at Gartner Inc. "The entrepreneurial CIO, the cost-optimization CIO, the revenue-generating CIO, the innovation CIO, the business development CIO and the public-serving CIO [in the public sector]." McGee highlights the revenue-generating CIO as particularly forward-thinking for his or her focus on "context-aware, pattern-based strategies; social networking; and the innovation part, where you actually put your IT people in the R&D department."

Genoese-Zerbi clearly envisions himself in this role. "I need to make it my business to know how airplanes are designed, built and operated," he says, "and find all the places where I can inject technology to make that entire process have much higher value." ■



GOIN' MOBILE

The combination of virtualization and next-gen smartphones and tablets is giving business leaders more access than ever from afar.

Get ready to take your show on the road. Companies are activating iPhones, Android devices and Windows Mobile devices at an increasingly rapid rate, according to mobile-technology research firms. The iPad is being used for sales tracking and corporate presentations, with new functions being dreamed up every day. Meanwhile, wireless sector analysis firm Juniper Research Ltd. is forecasting that the total market for cloud-based mobile apps will increase 88 percent between 2009 and 2014 — of which 75 percent will be enterprise users. That is one very "cloudy" forecast. — Alec Foegen

CEO **ROGER AGNELLI**
WANTS VALE TO
BE THE BIGGEST
MINING COMPANY
IN THE WORLD.

BY SUSAN CAMINITI

IRON MAN

In northern Brazil, in the heart of the Amazon rain forest, is the Carajás mining complex, where a reported 300,000 tons of iron ore are extracted each day. To ensure that the mines at Carajás are working as efficiently as possible, owner **VALE SA** (VALE), Brazil's largest mining company as measured by revenue, built an operational control center within the complex in 2007 that essentially acts like the mine's brain, explains President and CEO Roger Agnelli. He says

everything to do with operations within the enormous mine — the equipment used there, treatment plants for the ore, and dispatch facilities — is monitored and controlled remotely through the use of satellites. Engineers, he points out, can see what's happening at any stage of production: how a particular piece of equipment is working, for example, or how much ore is in a crusher at any given moment. They can also make corrections or changes in real time.

Walking through this control center and visiting Vale's geologists and engineers to

see what new ideas they have dreamed up is one aspect that Agnelli, 50, says he truly enjoys about his job. "I'm crazy about technology and innovation," he says from the company's Rio de Janeiro headquarters. "I love to visit the different operations to see what they're working on and how they're figuring things out."

Agnelli oversees a global mining empire with 115,000 employees (its own and contractors) spread across 38 countries on five continents. Vale, pronounced like the word *valley*, is the world's largest producer of iron ore (the

main component of steel) and the second largest producer of nickel (a key strengthening agent in steel), analysts say. It has a market cap of about \$175 billion, about 55 times greater than its value when the Brazilian government privatized the company in 1997 and approximately 19 times greater than when Agnelli took over in 2001, the company reports.

Aside from identifying problems that could slow production, Vale's satellite technology helps engineers find the most energy-efficient routes between where the iron ore is extracted and the facility in the complex

» Read about Vale's plans to use palm oil to power its railroad network at nysemagazine.com/valepalm. **ON THE WEB**

UNDER CEO ROGER AGNELLI,
Vale has built a high-tech control
center at its Carajás mine in the
Amazon rain forest.

where it will be processed. Massive off-highway trucks capable of hauling upward of 240 tons of material (10 times more than what a typical commercial construction truck can carry) currently transport the ore from the mine to the processing plants. But beginning in 2014, giant automated conveyor belts, which are now under construction, will replace the trucks, explains Luiz Mello, director of technology and innovation at Vale.

The advantages of the conveyor belts are easy to see. Unlike trucks, the belts are powered by electricity, not fossil fuels. They're also less affected by rainy weather conditions found in the Amazon rain forest that often make the ramps and roads the trucks use as slippery as ice. The biggest technological challenge, explains Mello, was engineering the new conveyor belts to handle the enormous weight of the iron ore for distances of up to 10 miles. "We had to figure out how to make the supporting structure stronger and tested it repeatedly to ensure it could handle the sheer stress of the iron ore's weight," he says.

The conveyor belts, which will also be controlled through the operations center, are a good example of Agnelli's belief in the power of technology. "What we are investing in new technologies — to reduce emissions,

JUST THE FACTS

HEADQUARTERS
Rio de Janeiro

2009 SALES
\$23.3 billion

MARKET CAP
\$174.6 billion*

EMPLOYEES
115,000

LISTED SINCE
June 20, 2000

*Market cap as of Dec. 14, 2010

to develop new products and to find better, more cost-efficient ways to run the business — will drive Vale's growth in the future," he says.

A BANKER BY TRADE

Before stepping into the role of CEO of Vale in 2001, Agnelli had spent the 1980s and 1990s as an investment banker at the Brazilian financial firm **BANCO BRADESCO SA** (BBD). In that position, he worked on his

share of important deals. But the one he helped usher through in 1992 for pulpmaker Aracruz Celulose SA — which merged with Votorantim Celulose e Papel SA in August 2009 to form **FIBRIA CELULOSE SA** (FBR) — was the deal that put Agnelli on the map: It would be the first Brazilian company to list its shares on the New York Stock Exchange. Bankers in both the U.S. and Brazil viewed the deal as pioneering and a precursor to the important place Brazil would come to occupy on the world financial stage in the years ahead.

But just as the offering was about to be priced, in May 1992, news broke in the Brazilian press about President Fernando Collor de Mello and allegations of corruption. (Collor was eventually impeached and resigned the presidency in December 1992; he was later acquitted of corruption charges.) "This deal was supposed to be the poster child

for the new, cleaned-up Brazil, and suddenly it had a whiff of the old, bad Brazil," recalls Nicolas Grabar, a partner at the New York branch of international law firm Cleary Gottlieb Steen & Hamilton LLP, who worked with Agnelli on the Aracruz deal.

With nervous bankers and investors wondering if Brazil's maiden U.S. listing was in jeopardy, Agnelli sprang into action. He imposed calm on the proceedings, Grabar remembers, reassuring everyone that the company and its financials were solid, and kept the deal on track to completion. "Roger has this unique combination of being very excitable and passionate and yet completely unflappable," he says. "He knew the deal was going to be okay and was determined to make sure everybody else knew it too. He's pretty much an unstoppable force."

Agnelli's extensive investment banking connections made him the logical choice for Vale. After the Aracruz deal, he was often involved in discussions concerning the financing of many of Brazil's most promising companies. Three years after the government privatized Vale in a nearly \$3.2 billion transaction in 2007, Agnelli was offered the position of chairman. Fourteen months later, he was named president and CEO.

According to Agnelli, the chance to run Vale let him put into practice all he had absorbed during his deal-making days: the importance of decisiveness; the absolute need to invest in technology and use it to control costs; and, perhaps most important, the

FERTILIZERS: A GROWING BUSINESS



ONE OF THE UNIVERSAL TRUTHS about economic growth is that when per-capita income rises, people consume more meat. That shift is good news for Vale and its goal of becoming the world's leader in crop fertilizers, which are used to produce the grain to feed the animals. The min-

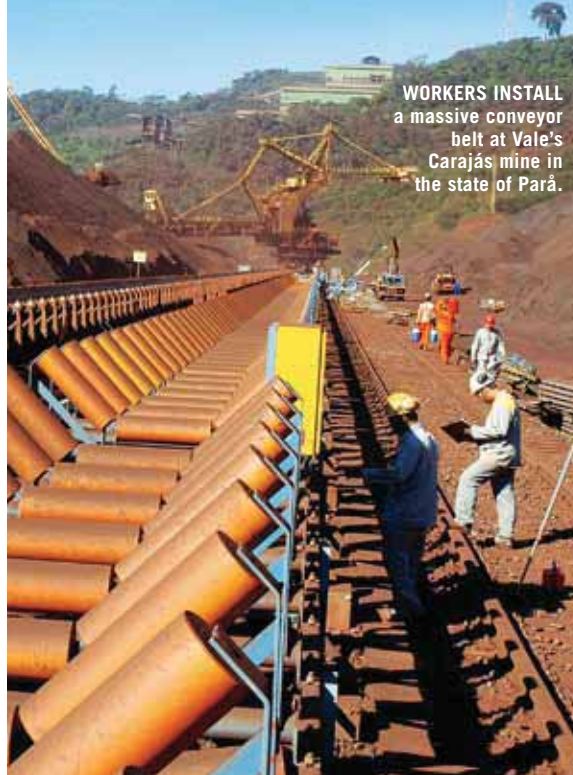
ing company says it has diversified its portfolio through a series of acquisitions in the fertilizer sector, including potash mines in Argentina and Canada. Last May Vale bought the Brazilian fertilizer nutrients assets of White Plains, New York-based **BUNGE LTD.** (BG) for a reported

\$3.8 billion. In a move designed to signal Vale's intent to become a major player in the business, the company recently restructured some of its operations to form Vale Fertilizantes SA and says it has budgeted \$12 billion for more fertilizer investments in the next three years.

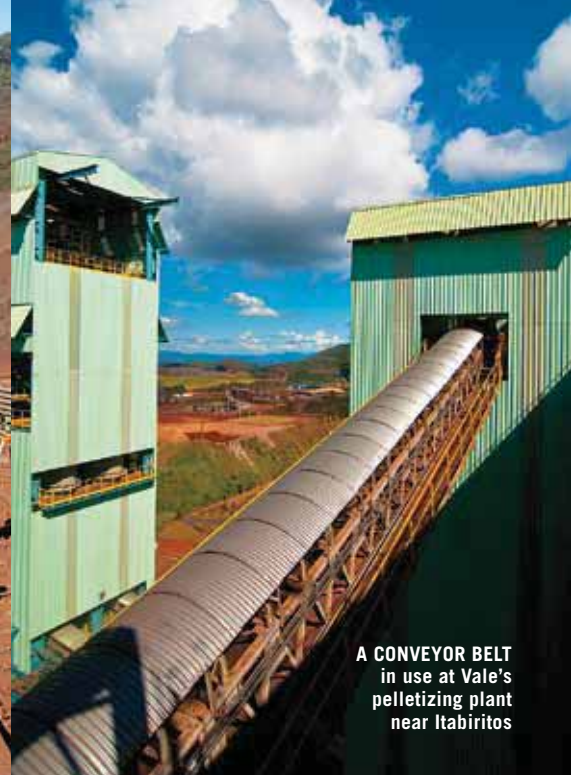
foresight to understand the crucial role that emerging markets would play in the mining industry. “I was involved in lots of restructuring processes of companies in Brazil,” the CEO says of his banking life. “I saw the good results when a company was managed well, and the bad results — how not to run a business.”

Vale has benefited from Agnelli’s skill at the negotiating table, as evidenced by the 15 acquisitions he’s made since arriving. “Roger is a very effective negotiator and sees the big picture without losing his grasp of the details of a deal,” Grabar adds. “He knows how to find the path where everyone feels like they’re benefiting.”

For all his skill in deal-making and finance, Agnelli, a married father of a son and daughter, both in their twenties, claims his first love



WORKERS INSTALL a massive conveyor belt at Vale's Carajás mine in the state of Pará.



A CONVEYOR BELT in use at Vale's pelletizing plant near Itabirito

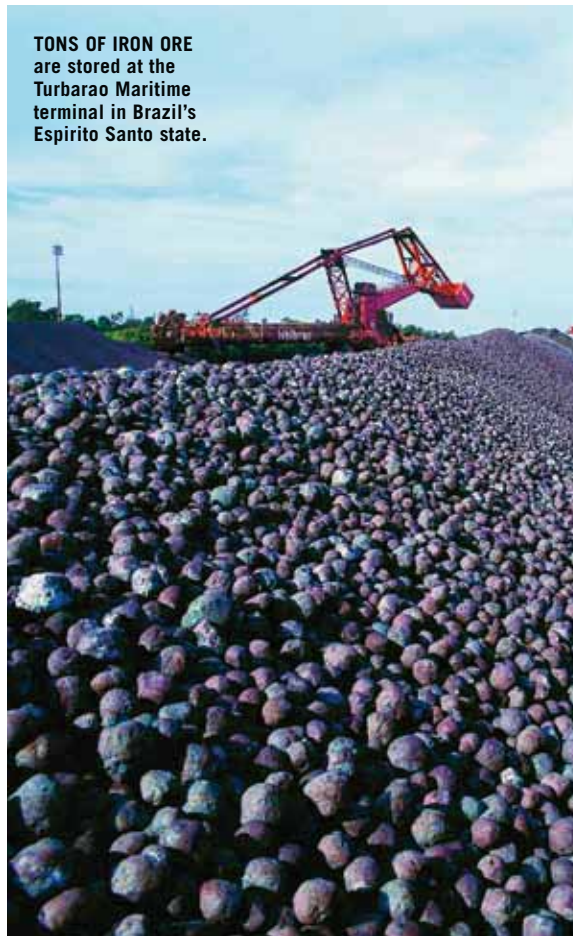
“WHAT WE ARE INVESTING IN NEW TECHNOLOGIES — TO REDUCE EMISSIONS, TO DEVELOP NEW PRODUCTS AND TO [BE] MORE COST-EFFICIENT — WILL DRIVE VALE’S GROWTH.”

— ROGER AGNELLI, PRESIDENT AND CEO

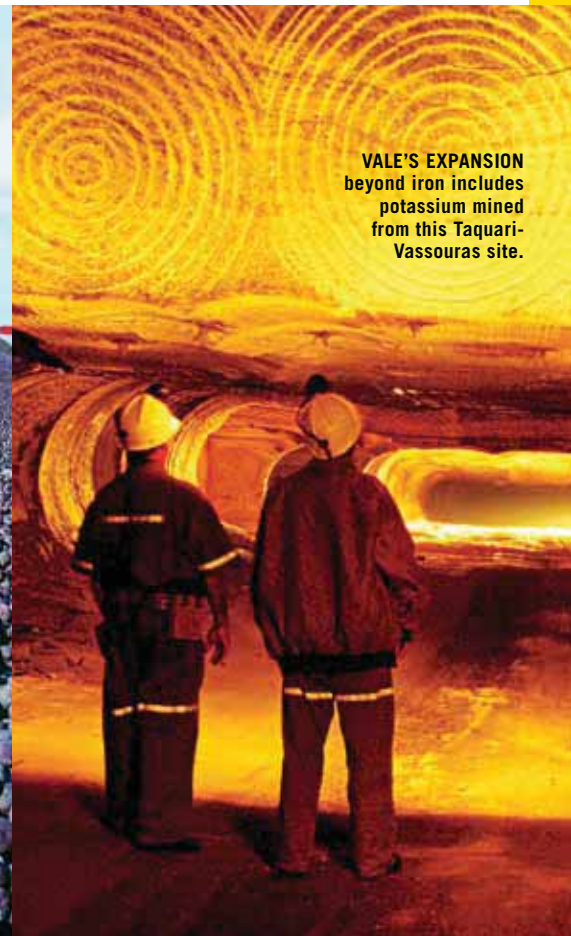
isn’t banking. “To be honest, I wanted to be an engineer,” he says. But with a degree in economics from the Fundação Armando Alvares Penteado, a university in São Paulo, Agnelli joined Banco Bradesco in 1981. “When I was starting out, Brazil was a very closed country,” he explains. “If a Brazilian company wanted to raise money, only the official banks were available. I thought we needed to have better capital markets, so that’s why I decided to go into banking.” After a big, hearty laugh, he adds, “I think it was a good thing, no?”

FOCUS ON ASIA

Vale was a domestic player of respectable size when Agnelli joined the company, with about 75 percent of its revenues coming from the iron ore it mined deep in the Amazon rain forest. The rest came from mining a smattering of other minerals, such as copper and nickel. This strategy didn’t give Vale much heft



TONS OF IRON ORE are stored at the Turbarao Maritime terminal in Brazil's Espírito Santo state.



VALE'S EXPANSION beyond iron includes potassium mined from this Taquari-Vassouras site.

“TEN YEARS AGO, PEOPLE LOOKED AT CHINA, AFRICA AND INDONESIA AS LOW-COST PRODUCERS. TODAY, EVERYONE [SEES THEM] AS A MARKET FOR THEIR PRODUCTS.”

— ROGER AGNELLI, PRESIDENT AND CEO

or leverage in the marketplace, analysts say. “When I came to Vale, mining was seen as a very slow and heavy kind of industry,” Agnelli explains. “In investment banking, everything is fast and light. You look at the facts, make decisions and move, and I think that is a good thing for business. So I brought some of that speed and fast decision-making to Vale.”

And of course, he made deals. Agnelli’s first order of business was to unload operating units that weren’t likely to be long-term winners, including paper and forestry, he says. He then used the money to gobble up smaller mining companies in Latin America, Africa and Asia, as well as to diversify and bolster Vale’s portfolio with copper, nickel and fertilizer. “If we were going to be in any of these businesses, we had to build up each one and be strong,” he says. (See “Fertilizers: A Growing Business,” page 30.)

To drive home the point that he intended to make Vale a force in more than iron ore, Agnelli completed the acquisition of rival Canadian nickel miner Inco Ltd. in 2007. Vale says it financed the \$18 billion purchase — the biggest in its history — with the help of **UBS AG** (UBS), **CREDIT SUISSE GROUP AG** (CRP), **BANCO SANTANDER (BRASIL) SA** (BSBR), **ABN AMRO Group NV** and 33 other banks from around the world. One of the largest syndicated loans ever secured in an emerging country, according to the international financial services law firm Milbank, Tweed, Hadley & McCloy LLP, the funding further proved that Agnelli’s banking acumen was being put to good use. With nickel’s use in home construction as well as the making of stainless steel appliances and electric car batteries, Agnelli says he is confident that Vale’s nickel business will continue to grow.

The move to fortify its portfolio, especially in iron ore and nickel, highlights Agnelli’s beliefs about the company’s future. “Our traditional market used to be Europe,” he says. “It’s not anymore. Asia is the strongest and largest market for our products.”

With millions of people moving from rural areas to cities in China, the spending on housing, cars, apartments and food — all big users of metals and minerals — is growing, explains independent mining analyst John Tumazos. Indeed, by 2004, with the commodities boom in full swing thanks to China’s exploding growth, Vale was already beginning to see signs of this transformation. Today, 60 percent of the company’s nearly \$25 billion in sales are in Asia, observes Vale CFO Guilherme Cavalcanti, and that number, he adds, is projected to reach 80 percent by 2020. Adds Agnelli: “Ten years ago, people looked at China, Africa and Indonesia as low-cost producers. Today, everyone is looking upon these places as a market for their products.”

STEELY COLLABORATION

Back home, Vale is urging its iron ore customers to become its partners in the steel

business. About 20 percent of the steel produced around the globe is made with Vale’s iron ore, yet according to the World Steel Association, Brazil produced only 2.2 percent of the world’s crude steel in 2009.

To increase steel production to meet Brazil’s growing infrastructure needs (and to help guarantee demand for Vale’s iron ore), the company says it has signed joint-venture agreements with several foreign customers, including German steelmaker ThyssenKrupp AG, to build steel mills in Brazil. The companies get access to Vale’s high-quality iron ore and transportation facilities — including several ports and four railway systems — and Vale gets the steel it needs to continue building out the country’s infrastructure. The ThyssenKrupp facility, which started production last summer and created 3,500 new jobs in Brazil, is capable of producing 5 million metric tons of steel slabs per year and will use 8 million tons of Vale’s iron ore annually. “We don’t intend to operate steel mills or be steel operators,” Agnelli is quick to add. “Our main objective is to foster steel production with our customers. It’s a good arrangement for everyone.” ■

IN MY OWN WORDS

ROGER AGNELLI
PRESIDENT AND CEO
VALE

- » **My perfect day would be spent** at my vacation home in Angra dos Reis, sailing around [the islands]. It’s the most beautiful place in the world.
- » **If I could meet my 20-year-old self, I would say** “the most precious thing in the world is youth.”
- » **My favorite book is** *The Pillars of the Earth*, by Ken Follett. It’s a book about challenges. I love it.
- » **The best management advice I’ve ever received was** do not get worked up about little things from the past. Troubles or frustrations — let them go. We always have to look ahead.

MEETING IN PROGRESS

New tools encourage engagement and enhance oversight for tech-savvy boards.

BY REBECCA McREYNOLDS

TECHNOLOGY ISN'T JUST CHANGING the way businesses manage information. It is changing the way businesses are managed. New tools are available that make corporate oversight easier and board performance more transparent to shareholders and regulators alike, says Catherine Bromilow, CPA, a partner in PwC's Center for Board Governance. Until recently, she observes, many boards had been slow to embrace much of the technology available, but that's starting to change.

In 2010 nearly half of all boards — 46 percent — were using a corporate intranet site to store and share information, according to

PwC's *Annual Corporate Directors Survey* released in November 2010. That's up from just 28 percent in 2006, Bromilow says. Most of these early adopters are large, multinational corporations, with 61 percent of companies with revenue of more than \$10 billion offering a secure board intranet location, she notes. "Intranets can be particularly helpful if directors have multiple residences or travel extensively," she says. Adoption of intranets and other high-tech tools will continue to increase, she adds, as directors become more comfortable using technology to interact with one another and with corporate management.



BOARD PORTALS

With companies' increasing complexity and the expansion of board responsibilities, the information required to oversee management has grown exponentially, with board packages now routinely numbering in the hundreds or thousands of pages, Bromilow says. "One board member told me the company has to make sure that the members of the audit committee are physically fit, because of the amount of paper they have to carry around," she jokes.

Board portals are one easy fix to that problem, explains F. Daniel Siciliano, faculty director of Stanford University's Rock Center for Corporate Governance. By putting all of that information on their intranet sites, companies can reduce the need to ship sensitive materials and make it easier for board members who travel extensively to stay in touch. Directors can review documents or communicate with other members at any time, even when they are on the road, or download key documents to their computers for offline review (assuming strict security protocols are followed).

Many board portals provide a dashboard of key performance indicators for a quick view of the organization's performance, and even let directors vote online, Siciliano says. Companies can outsource the upkeep and management of their portals to third-party providers. "Board members should have options as to how they want to receive their materials," Siciliano says, "but if your board is not taking advantage of virtual solutions available through board portals, it's probably time to ask why."

INFORMATION MANAGEMENT

Information is only as powerful as the user's ability to manage and interpret it. Tech-savvy boards are incorporating SaaS, or software as a service (see "The Virtual Toolbox," page 23), applications to make their portals more interactive for members, Siciliano says. For example, instead of just reading a static financial report, he says, board members with SaaS tools can create their own dynamic statements by aggregating data from multiple sources and manipulating the information to identify trends.

46

The percentage of companies using a corporate intranet site to store and share information, according to PwC's *Annual Corporate Directors Survey*.

gating data from multiple sources and manipulating the information to identify trends.

Customizable search engines such as Google Alerts will scour the Internet for you, finding any news or postings that match your preset parameters and alerting you to information that you may have missed, says Charles M. Elson, director of the Weinberg Center for Corporate Governance at the University of Delaware. "The whole point is that the directors are there to assess management performance," he says, "so anything that brings more information to the attention of directors is helpful."

VIRTUAL MEETINGS

Despite pushback from some shareholder groups, virtual annual meetings are starting to gain traction as technology improves and their benefits become more obvious, says Richard Daly, CEO of **BROADRIDGE FINANCIAL SOLUTIONS INC.** (BR), a technology services company based in Lake Success, N.Y. Besides being less expensive to organize, they provide access for shareholders who couldn't otherwise participate, he adds. Among the public companies that have used Broadridge's Virtual Shareholder Meeting system to host annual meetings, Daly says, participation has increased an average of tenfold.

Anything that enhances a board's ability to interact with corporate management is increasingly important in today's global marketplace, says Greg Kenepp, chief marketing officer at New York City-based **INTRALINKS HOLDINGS INC.** (IL), which provides SaaS solutions for securely managing content in the cloud. An IntraLinks exchange, for example, creates a secure location for parties from around the globe to access and exchange

information 24/7 using a standard Web browser, according to Kenepp. IntraLinks used its system extensively when it was preparing to list on the New York Stock Exchange, Kenepp says, adding, "We had more than 60 participants from 12 different entities accessing our information and communicating regularly."

The most technologically savvy boards will adopt new tools as they evolve, says Joseph A. Grundfest, a law professor at Stanford University and a former SEC commissioner, while others will continue to operate as if the Internet was never invented. "This is not to say that one approach is better or worse," Grundfest says. "The reality is that the optimal approach probably depends on the work styles of individual board members." ■

SAFE AND SOUND

Best practices for boards adopting new technology

- » **Achieve** a level of network protection that's reliable but not intimidating by adopting security procedures that resemble online banking systems, which have multiple log-in layers.
- » **Caution** directors against inserting notes into online documents, which leave an electronic trail that could disgruntle shareholders and raise legal concerns.
- » **Make** new technology accessible to board members anytime and anywhere to fit within the rigorous, unpredictable schedule of the business world.
- » **Ensure** that new systems are simple and intuitive, because directors don't have time to learn complex technologies.
- » **Mesh** any new technology with the personal style and needs of board members; otherwise it will create more headaches than it will help.

SOURCES: BROMILOW, GRUNDFEST, KENEPP AND SICILIANO

TINY CHIPS, BIG BUSINESS

The semiconductor industry continues to grow by solving big problems in smaller and smaller ways.

BY CHRIS WARREN

WHEN DONALD MACLEOD considers the changes that have swept the semiconductor industry over the past 15 years, he sees a story of the simple becoming complex. Macleod is chairman and CEO of Santa Clara, Calif.-based **NATIONAL SEMICONDUCTOR CORP. (NSM)**, a company that specializes in the manufacture of so-called analog semiconductor devices, including power management circuits and data conversion products, for a variety of electronics markets. For him, the 1990s were relatively straightforward. "In the '90s, the driver of semiconductors was the PC market," Macleod says.

Of course, this is how many people have historically regarded those in the industry: as producers of the microprocessors and transistors that make computers and other electronics function. But much has changed over the past decade or so, Macleod observes — and that's a good thing for National Semiconductor. "When you look at the characteristics of a PC, it had very little analog content. Instead, it was mostly digital semiconductors, which focus on processing and memory. The transition of a semiconductor industry driven by computers to one that is now driven, in our case, by the themes of portability and energy efficiency created a whole new set of opportunities for companies like ours."

Indeed, semiconductor applications — which broadly refer to the many devices that use semiconductor material, typically silicon, as a building block — range from solar energy to smartphones to electric cars. "Semiconductors are fundamental for all of

the modern technological revolutions," says Carlo Bozotti, president and CEO of Geneva-based **STMICROELECTRONICS NV (STM)**. (For a Q&A with Bozotti, see page 10.)

Rich Templeton, chairman, president and CEO of **TEXAS INSTRUMENTS INC. (TXN)**, a global analog and digital semiconductor design and manufacturing company, says one of the most appealing qualities about the industry is the opportunity to solve some of

THIS INDUSTRY HAS THE OPPORTUNITY TO SOLVE SOME OF THE WORLD'S MOST PRESSING PROBLEMS.

the world's most pressing problems. Texas Instruments serves some 80,000 customers with its three core businesses of analog chips, smartphone chips and embedded processing — which allows, for example, gaming, MP3 players and video powered by

digital signal processors to provide users with a real-time experience.

In the realm of renewable energy, semiconductor companies are also playing a crucial role. According to National Semiconductor's Macleod, his company's SolarMagic technology helps boost the performance of photovoltaic solar panels by recovering as much as 70 percent of the energy lost when panels are shaded, mismatched, or covered with dirt and debris. Macleod adds that semiconductors will surely play a key role in the rapidly expanding use of environmentally friendly, energy-efficient LED lighting — which is increasingly being used in automobile dashboards and streetlights. They will also be vital in electric vehicles powered by lithium-ion battery packs. "You need semiconductor solutions to manage how they're used, how they're discharged and how they're charged so they don't over-heat," he says.

According to the Semiconductor Industry Association, \$115 billion of the \$226 billion in 2009 worldwide semiconductor sales came from the U.S. — but that just highlights the growth potential of areas outside of the U.S., says Texas Instruments' Templeton, who notes that consumer demands of a growing middle class are driving business in areas such as China,

EXPANDING HORIZONS

One reason for the industry's recent spike in growth is a broader use of semiconductor material, which can now be found in the following items.



LED LIGHTS



ELECTRIC CAR BATTERIES



SOLAR PANELS



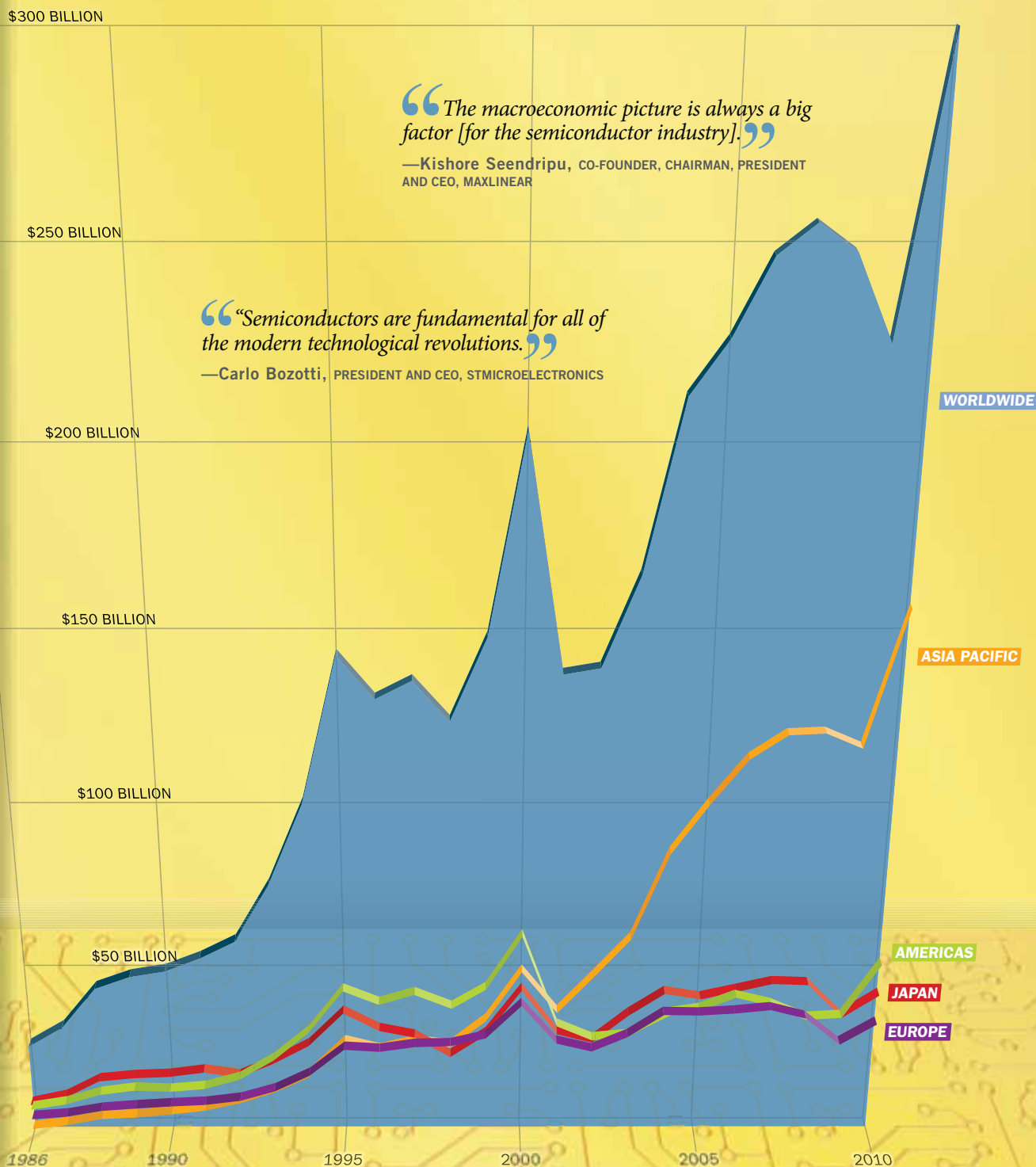
SMARTPHONES



MEDICAL EQUIPMENT

GOOD CONDUCT

This chart shows annual worldwide semiconductor industry sales, from 1986 — when the U.S. and Japan led the market — to today, when the majority of sales are made by companies in mainland China and Taiwan.



SOURCE: WORLD SEMICONDUCTOR TRADE STATISTICS

India and Eastern Europe. “These regions are also aggressively building out their infrastructures to meet the needs of their people and to compete globally,” says Templeton, who notes that in mid-October, Texas Instruments announced its first semiconductor manufacturing plant in Chengdu, China.

Timothy Main, president and CEO of St. Petersburg, Florida-based **JABIL CIRCUIT INC.** (JBL), which provides design, product management and manufacturing for a host of international industries, including life science equipment and meters for smart grids and solar panels, goes further still. “As emerging economies have become more important, customers need access to those emerging markets to

CONSUMER DEMANDS OF A GROWING MIDDLE CLASS ARE DRIVING BUSINESS IN AREAS SUCH AS CHINA, INDIA AND EASTERN EUROPE.

drive their growth,” he says. “Most people we talk to believe that growth in the U.S., Europe and Japan, which represent 55 percent to 60 percent of the global economy, will continue to be lackluster at best at least for the next three, four or five years.” But, he says, that will be offset by Jabil’s emerging-market operations. ■

SEMICONDUCTOR COMPANIES*

Advanced Micro Devices Inc. (AMD)

Market cap: \$5.5 billion[†]

Sunnyvale, Calif.

Advanced Semiconductor Engineering Inc. (ASX)

\$6.7 billion

Kaohsiung, Taiwan

Advantest Corp. (ATE)

\$3.9 billion

Tokyo, Japan

Aeroflex Holding Corp. (ARX)

\$1.3 billion

Plainview, N.Y.

Analog Devices Inc. (ADI)

\$11.1 billion

Norwood, Mass.

ASM International NV (ASMI)

\$1.2 billion

Almere, Netherlands

ASML Holding NV (ASML)

\$12 billion

Veldhoven, Netherlands

Atmel Corp. (NYSE Euronext: AML)

€4 billion (US\$5.3 billion)

San Jose, Calif.

BE Semiconductor Industries NV (BESI)

\$165 million

Duiven, Netherlands

Dane-Elec Memory (NYSE Euronext: DAN)

€19.7 million (US\$26 million)

Bagnollet, France

Dolphin Integration (NYSE Alternext: ALDOL)

€3 million (US\$4 million)

Meylan, France

Fairchild Semiconductor Corp. (FCS)

\$1.9 billion

South Portland, Maine

Inphi Corp. (IPHI)

\$433.9 million

Santa Clara, Calif.

International Rectifier Corp. (IRF)

\$2 billion

El Segundo, Calif.

LSI Corp. (LSI)

\$3.7 billion

Milpitas, Calif.

MaxLinear Inc. (MXL)

\$335.6 million

Carlsbad, Calif.

Melexis NV (NYSE Euronext: MELE)

\$546 million

Ieper, Belgium

MEMC Electronic Materials Inc. (WFR)

\$2.6 billion

St. Peters, Mo.

Memscap Regpt (NYSE Euronext: MEMS)

€15.7 million (US\$20.8 million)

Bernin, France

National Semiconductor Corp. (NSM)

\$3.3 billion

Santa Clara, Calif.

Riber (NYSE Euronext: RIB)

€43.4 million (US\$57.6 million)

Bezons, France

Semiconductor Manufacturing International Corp. (SMI)

\$1.9 billion

Shanghai, China

Sensata Technologies Holding NV (ST)

\$5 billion

Attleboro, Mass.

Soitec (NYSE Euronext: SOI)

€734.6 million (US\$974.1 million)

Bernin, France

Spancion Inc. (CODE)

\$1.3 billion

Sunnyvale, Calif.

STMicroelectronics NV (STM)

\$8.8 billion

Geneva, Switzerland

Taiwan Semiconductor Manufacturing Co. Ltd. (TSM)

\$62.5 billion

Hsinchu, Taiwan

Teradyne Inc. (TER)

\$2.5 billion

North Reading, Mass.

Texas Instruments Inc. (TXN)

\$38.3 billion

Dallas, Texas

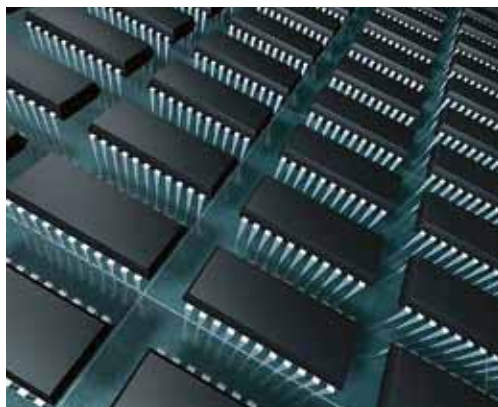
United Microelectronics Corp. (UMC)

\$8 billion

Hsinchu, Taiwan

*Semiconductor companies as defined by the Industry Classification Benchmark of FTSE International Ltd. and Dow Jones & Co. Inc.

[†]Market caps as of Dec. 14, 2010

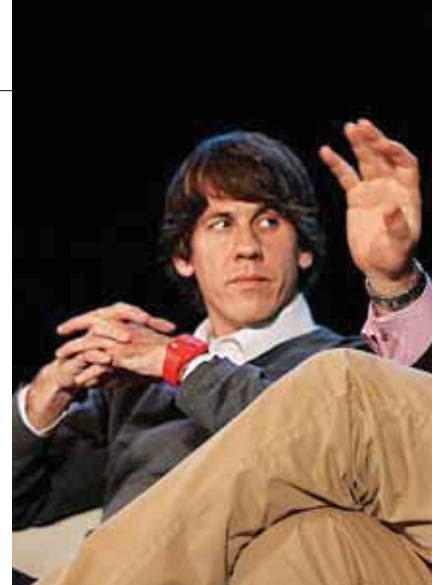


“We have created a new category of power management optimization using semiconductors for solar energy panels.”

—Donald Macleod, CHAIRMAN AND CEO, NATIONAL SEMICONDUCTOR

“Think of the potential if you could shrink the size and reduce the costs of [medical] scanning equipment. It could become portable, more affordable, more pervasive.”

—Rich Templeton, CHAIRMAN, PRESIDENT AND CEO, TEXAS INSTRUMENTS



5 MARKETING MUSTS

In the digital age, companies should blog, tweet and share in ways that stay true to their messages.

BY SHARON KAHN

PUT 100 MARKETING HEAVYWEIGHTS IN A ROOM — as NYSE Euronext did recently at the Executive Marketing Summit co-sponsored by *The Wall Street Journal* — and you'll see a surprising amount of consensus. Panelists such as John Compton, CEO of PepsiCo Americas Foods, an arm of **PEPSICO INC.** (PEP), and Dennis Crowley, co-founder of

Foursquare, agreed that corporate life and advertising have been forever altered by the still-evolving digital age. The daylong event, titled "Innovation and Information: Cultivating Marketing Success," suggested at least five behaviors that successful marketers are now putting into play. In no particular order, they include the following:

1

GIVE UP CONTROL

Digital users are "friends" or "fans," and as such they expect to interact with brands and share that information with their inner circle. That means talking *with* rather than *at* customers, as most advertisers have done until now. Says Christopher Baccus, executive director of digital and social media at **AT&T INC.** (T): "The best advertising involves getting the right message to the right person at the right time, and letting them run with it."

This lesson is going viral in more traditional forms of advertising, says Compton, who points to customer-generated Doritos ads that Pepsi launched at the 2007 Super Bowl. "Some people said we were crazy — booking \$2 million or \$3 million worth of commercial time for ads submitted by teenagers with no idea what the content would be." Still, he says, the first ad was such a hit that the company continues the tradition and intends to run six customer-generated ads during the 2011 Super Bowl.

2

TAILOR YOUR MESSAGE...

...to the medium. "Content providers have designed their messages for Google and other search engines," points out Tim Armstrong, chairman and CEO of **AOL INC.** (AOL). "Many are just now realizing that they need a different message for LinkedIn and another for Twitter." (*Learn how AOL is creating customized local news through its new Patch platform in "Read All About It," page 7.*)

Tory Burch, CEO of clothing designer Tory Burch LLC, says, "When we began tweeting, I delegated that task to someone on staff. But I realized that it needed to be my voice. So I've become a voracious tweeter." Although a product Website is legitimate, don't try to sell too hard on social media sites. Pepsi, for example, is more likely to post information on social sites about events it sponsors than to try to sell chips or soft drinks on those sites, Compton says.

3

GO LOCAL

Paradoxically, digital media is open to everyone but is far more intimate than more traditional formats. Ben Edwards, vice president for digital strategy and development at **IBM CORP.** (IBM), points to IBM's launch of Creek Watch, an iPhone application that enables users to snap a picture of their local waterway, then annotate the image and upload it to CreekWatch.org, where users can track environmental data. He says IBM also encourages staff and community involvement through its People for a Smarter Planet site, featured on Facebook, which provides opportunities for employees and others to sign on to projects taking place in their own backyards.

4

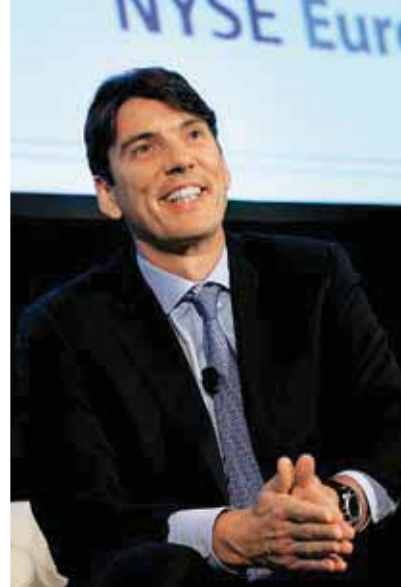
DON'T OVERUSE METRICS

Because digital media is capable of measuring so much information, Edwards worries that advertisers sometimes succumb to "the tyranny of numbers," adding that most transactions still take place offline and may occur months after a customer has visited a site. That said, the robust data mining that is possible through the Internet has encouraged customer targeting, again playing into the "go local" theme of delivering what specific communities or customer bases want. And as applications such as Foursquare begin connecting advertisers with customer credit cards, Crowley says to look for a whole new level of metrics.

EVENTS

HOST YOUR EVENT AT THE NYSE

» For information on having your event at the NYSE, visit nyx.com/eventrental or contact CorporateEvents@nyx.com.



MEETING OF THE MARKETING MINDS Speakers included (from left): Foursquare Co-founder Dennis Crowley; IBM's Ben Edwards; Tory Burch, CEO of Tory Burch LLC; PepsiCo Americas Foods CEO John Compton and AOL CEO Tim Armstrong.

5

GUARD YOUR BRAND

As customers are tasered by the sheer numbers of content providers, "brands are increasingly significant," Armstrong says. "Consumers zero in on those they trust." In addition to delivering on their promises, companies increasingly partner with trusted sites, including social network sites, as a way to achieve credibility.

Armstrong also suggests that brand advertising (as opposed to specific product ads) hasn't worked on the Web because of page clutter. Noting that most Websites resemble the designs first implemented 15 or more years ago, Armstrong says AOL is rethinking its basic format. "With six to eight ads crowded on a page, we found the average page contained only 18 percent content," he says. The redesign will restrict each page to one advertiser. Not only will that approach allow significantly more content, he says, it will also help advertisers set themselves apart from competitors. ■

THE CATALYST

The following is excerpted from a Q&A with Esther Dyson, Internet pioneer and chairman of EDventure Holdings, which invests in IT startups around the globe.

» How is marketing changing?

A marketer needs to understand that you're no longer just pouring a message into people's heads. When you're trying to find people who will retransmit your message, the skills are closer to PR than to advertising. You used to be able to interrupt a conversation by showing your ad on TV. Now you either need to join the conversation in an appropriate way or get kicked out. Marketers considered to be authentic can join the conversation. Joe's Sporting Goods, for example, can sponsor a third baseman to sign baseballs after the local game. That's very different from Joe putting up a billboard that blocks the view or shouting about his store when the announcer is trying to talk about the game. A brand can now behave and interact with people. The creativity extends well beyond what can fit into a 30-second spot. The hard part is that you have to be willing to give up control. You have to relax and be part of that conversation even if every second sentence makes you wince. What's more, people aren't that impressed with you giving \$1 to charity for every \$100 you spend. They want you to *do* something. Send the bottle caps you collect to the factory to be melted down and made into engines for the poor — that's much more impressive.

» Do marketers need to think local?

Going local is not just a geographical focus but also speaking to networks of friends either through social networks or through your resellers or otherwise. Companies need to figure out what *local* means for their product or service. Pampers supports local moms' Meetups, for example. They don't plaster ads, but donate diapers and sponsor the events so mothers think kindly of them.

Esther Dyson



Read the entire interview at nysemagazine.com/dyson.



A 21ST CENTURY EXCHANGE

Dominique Cerutti describes NYSE Euronext's strategic goal to drive the evolution of financial markets.

LEVERAGING ITS WIDE and unrivaled assets and innovation capabilities, NYSE Euronext has a clear ambition: to drive the evolution of the capital markets community. Below, President and Deputy CEO Dominique Cerutti describes the group's commitment to leadership in the capital markets transformation.

What are the main challenges driving the need for financial markets to evolve?

With no doubt, the key phenomenon influencing our planet and our economics this past decade has been an ever-accelerating globalization. It is driven by an increasing mobility both virtual and physical, by fundamental shifts in the world's eco-demographic data and by a broad availability of advanced technologies. Tremendous acceleration over the past decade has made the world more interconnected, instrumented and intelligent. Like other indus-

tries, global capital markets have gone through a complete transformation, which comes with opportunities but also with some challenges. Financial markets have experienced new types of participants and markets, and new regions are participating. Our industry has also seen the development of new regulatory frameworks in the world, initially aimed at protecting investors and ensuring that the capital markets serve the economy but having had significant side effects on transparency or market fragmentation. These evolutions are all the more challenging now given that the world has been addressing one of the biggest crises it has ever experienced.

Obviously, technology has been a key enabler in our industry's evolution, playing a bigger role in all businesses, enabling us to do things cheaper and creating sustainable advantages. Concretely, you have had growth in electronic trading and new venues challenging traditional domains. Moreover, pressure on all participants to handle the complexities is creating a series of new needs, such as multi-asset-class/multi-region trading, liquidity reaggregation, risk management and increased transparency. NYSE Euronext's position as the leading global exchange gives us relevant insight to these needs and poses significant opportunities to help our clients, whether they are buy-side, sell-side or other exchanges.

How has NYSE Euronext responded?

By using our global position to instill innovation in the world's capital markets. We have

WE LEVERAGE OUR GLOBAL POSITION, UNRIVALED POOLS OF LIQUIDITY, STATE-OF-THE-ART TECHNOLOGY AND OTHER ASSETS TO SUPPORT THE CAPITAL MARKET COMMUNITY WORLDWIDE.

NYSE Euronext
President and
Deputy CEO
Dominique Cerutti

redefined our overall strategy and what it means to be an exchange in the 21st century. Our mission is clear: We want to support the world's capital-market community to innovate and collaborate. Doing so means not only operating the world's most important capital market, but connecting the community using our wide distribution network, delivering innovative products and services to clients globally, and enabling customers to leverage our technology and scale to more effectively run their businesses.

To achieve this goal, we have worked hard the past few years to globalize our operations, reposition our businesses and reengineer the company. We leveraged advanced technologies that we combined with our business expertise, and I have to say it worked quite well. Not only could we take out almost \$500 million of our run rate costs, but we are now a global company that has found its voice. We are more than just a cash trading company. We've segmented the company three ways, giving us a unique position in the industry.

Our Cash Trading and Listings segment is the No. 1 cash exchange worldwide, trading one-third of the world's daily equity volume; it is also a world-leading listings venue. Our Derivatives segment is the No. 3 exchange in terms of number of contracts and No. 2 in terms of trading value. We are seen as very innovative in this area. Finally, our Information Services and Technology Solutions segment supports our commitment to addressing client needs and industry trends. We plan to triple

our Technology Solutions business revenue and margins within the next five years.

We leverage our global position, unrivaled pools of liquidity, state-of-the-art technology products and a number of other assets to support the capital market community worldwide.

In this global context, where regulators watch financial markets very closely, what role can NYSE Euronext play?

We believe we have a societal role to play to improve the quality and stability of financial markets in a landscape that has become quite fragmented and opaque both in the U.S. and Europe. By nature, we are the representative regulated market that ensures market integrity, transparency and price discovery. Our market model is unique in that it is mature and safe. For instance, we have mechanisms in the U.S. and Europe that can, in the case of volatility, slow the market, giving control to investors. This is our responsibility: to fight for ensuring that these basic objectives for which participants go to the market are met. This is why we use our wide range of assets to provide the deepest liquidity on our markets. It includes building bridges between our various liquidity pools but also with external partners.

We continuously develop new solutions, through innovative technology products or business models, which provide market participants with the tools to improve the quality of financial markets. I think our model should be a source of inspiration for other trading venues and a source of collaboration among regulators and markets.

Is technology a key differentiator?

It is. Technology can help us and our clients achieve better services, more transparency and more market information. We have built an unrivaled range of products and solutions around our main technology assets, including our new data centers in the U.S. and Europe, our fast and reliable Secure Financial Transaction Infrastructure® (SFTI®) and our best-of-breed Universal Trading PlatformSM.

— Jeanne Cotroneo Darrow

STRATEGIC TECH DEALS

NYSE Technologies not only delivers cutting-edge technology to customers, such as other global exchanges, but also provides business consultancy. "We're pooling our technology assets to create one-of-a-kind solutions," Cerutti says. Here are some of NYSE Euronext's newest technology customers:

» **QATAR EXCHANGE.** In 2009, NYSE Euronext partnered with Qatar Holding by acquiring a 20 percent stake in the Qatar Exchange to create an internationally recognized exchange that trades cash equities and derivatives. QE deployed NYSE Euronext's Universal Trading Platform for its cash exchange and is working with NYSE Technologies to create a derivatives market (see nysemagazine.com/insideqatar).

» **TOKYO STOCK EXCHANGE.** As part as an ongoing relationship, NYSE Technologies was selected by the Tokyo Stock Exchange in September 2010 to build and support its new futures trading platform.

» **WARSAW STOCK EXCHANGE.** Through a cooperation agreement signed in 2010, Warsaw Stock Exchange will migrate its cash and derivatives markets to NYSE Euronext's Universal Trading Platform while both parties explore new trading, market-data and business-development initiatives and create new IT-based opportunities in Poland and Central and Eastern Europe.



Visit nysemagazine.com/cerutti for more on NYSE Euronext's technology portfolio.



A GLOBAL APPROACH

As U.S. regulators work to implement the Dodd-Frank Act, NYSE Euronext is focusing its advocacy efforts on the EU.

EYE ON EUROPE » In the European Union, 2011 will be a very busy year for financial regulatory reform, and NYSE Euronext is working collaboratively across the Atlantic to ensure that issues important to our listed companies with global operations are represented before policymakers.

In addition to our Washington, D.C. office, NYSE Euronext has established an EU Government Affairs and Public Advocacy group led by Mark MacGann. The geographically diverse team, located in Brussels, Paris and London, works closely with our business units and legal teams across the jurisdictions in which we have a presence, including Amsterdam and Lisbon.

EU Government Affairs is structured differently from our U.S. operations, primarily because the EU legislative framework is quite complex. EU institutions do not reflect traditional U.S. government bodies, which are divided along legislative, executive, judicial and administrative functions. Rather, they have overlapping functions, and the legislative power is exercised by three institutions. The European

Commission proposes legislation, which must then be adopted by both the European Parliament and the Council of the EU. There are therefore several arenas for public advocacy in the EU, at both the EU and national levels.

As a resource for legislators, NYSE Euronext is uniquely positioned to influence the legislation so that it strikes the right balance, restores confidence in the financial markets and helps prevent financial crises in the future. This in turn should enable companies to access the capital they need to create jobs and stimulate economic growth.

OUR PRIORITIES » NYSE Euronext will be tackling numerous issues in 2011, on behalf of listed companies, on behalf of financial markets and for itself. In Europe our main focus will be on:

- » The review of the Markets in Financial Instruments Directive (MiFID);
- » The new European Market Infrastructure Regulation (EMIR);
- » The new Short Selling Regulation;
- » The review of the Market Abuse Directive (MAD). ■

MiFID, EMIR and Other EU Regulations

In Europe it is widely recognized that MiFID has led to a reduction in transparency in equity markets and that the amount of equity trading carried out over the counter (approximately 40 percent) is too large. We are expecting a proposal for a revised MiFID in Q2 2011 and will be following the review closely.

As a result of increased fragmentation and opacity of equity markets, application of MAD has been difficult. The European Commission is expected to propose a revised MAD in Q1 2011.

EMIR and the Short Selling Regulation will also attempt to increase transparency of the financial markets in Europe. Draft legislation has already been proposed and is expected to come into force in 2012.

Issuers, in particular small and medium-size enterprises, are also affected by the legislative reforms, increasingly raising their costs and administrative burdens. The right balance must be achieved among the needs for companies to provide transparency at a reasonable cost and for the buy side to have sufficient information to make its investment decisions.