

# Technology

## ■ Nanotech—The Next ‘Small’ Thing

The next big thing in the tech sector isn't big at all. Nanotechnology, in fact, concerns manufacturing on the tiniest scale—on the scale of one to 100 nanometers—or less than 100 billionth of a meter—in size. Even so, say business tech experts, nano's importance to business promises to be enormous. Lux Research, a nanotechnology research and advisory firm based in New York City, predicts that, over the next ten years, nanotechnology will be found in 15 percent of the world's products and drive a \$2.6 trillion market.

What makes nanotechnology such a potential boon is its applicability to so many different products and processes. As a true platform technology, it could enhance the function of tech devices and provide stronger, more resilient building materials. Computer switches that are molecularly sized, for example, could eventually replace silicon in computers, for faster operation and significantly greater capacities.

Nanotechnology is drawing students with technical backgrounds in science and engineering to the business school, says Steve Currall, associate professor of management, psychology, and statistics and the William and Stephanie Sick Professor of Entrepreneurship at the Jones School of Management at Rice University in Houston, Texas. “They want to leverage their technical backgrounds in an emerging new industry like nano,” he says. Currall also is the founding director of the Rice Alliance of Technology and Entrepreneurship, a key factor in *Small Times* magazine's naming Rice as the No. 1 university in the U.S. in the commer-



cialization of nanotechnology.

Founded in 1999, the Rice Alliance focuses on four areas of new technology development: energy, information technology, life sciences, and nanotechnology. However, nano is the area that has developed the most infrastructure, primarily through a \$12.8 million grant from the National Science Foundation in 2000. That grant helped the university develop its Center for Biological and Environmental Nanotechnology. Today, the school has already received 11 patents in nanotechnology and has spun off four startups in technology.

One of those four startups, Carbon Nanotechnologies Incorporated, specializes in single-walled carbon nano tubes. The tiny tubes look like spaghetti when viewed under an electron microscope, but are 100 times stronger than steel and one-sixth its weight. The tubes will have applications in everything from batteries to flat-panel displays to automobiles.

Nanotechnology's application in the business school is one of disciplinary integration, adds Currall. “Nano is another area

for true collaboration between business and engineering.” As demand for people with expertise in business and nanotechnology grows, Currall says, more people with chemistry or engineering backgrounds will want to pursue an MBA to position themselves well in the marketplace. He says, “It's a marketing opportunity for business schools that want to be on the cutting edge of a new industry.”

## ■ eBooks for EMBA's

It's no news that executives pursuing their MBAs often have to rely on distance learning and online technologies to stay on top of their programs. This year, the Pamplin College of Business at Virginia Polytechnic Institute and State University in Falls Church has given its 25 EMBA students a technological head start. Each student has been equipped with an Apple iBook laptop, iPod, Griffithalk microphone, and iSight camera to allow students to meet online, record interactive lectures, and participate in class, even when out of the area.

Charles Jacobina, executive director of Pamplin's EMBA program, wanted to make sure that face-to-face interaction was not lost, even if student schedules conflict. This



year's incoming class, he adds, is one of the first EMBA programs in the country to use Mac-based tools for distance learning.

Traditionally, EMBA programs prefer Windows-based technology, since most programs are designed to teach future executives how to use the same systems used in most businesses, says Jacobina. "In our case, our students are already well-versed in those areas. Instead, we needed a strong communication vehicle to bridge the distance between team members," he says. "We feel that Apple's innovative approach to using multipoint video is a big advantage over the PC."

Pamplin's Mac-based EMBA program will serve as a long-term focus group for Apple. The company will determine how businesspeople accustomed to working in PC environments use Mac technology.

## Interactive EMBA at LBS

To help 74 of its executive MBA students create a better work-life balance as they also pursue their educations, the London Business School has added a new tool in its distance learning arsenal. Its EMBA now will be powered by a collaborative learning platform, provided by the French company Genesys Conferencing. The new platform will allow the school's globally dispersed student cohort to hold virtual interactive study meetings from anywhere in the world.

The new service will reduce the need for students to travel to the school's Regent Park campus for group study sessions. Using the platform, students can see and hear the

### DATABIT

A recent survey sponsored by America Online found that 41 percent of Americans check their e-mail inboxes as soon as they get out of bed in the morning. Forty-five percent of respondents said they would like e-mail technology to allow them to retrieve sent messages before they've been read, and 43 percent would like the ability to know to whom their messages are forwarded.

discussion leader and give presentations in real time. They also can develop course case studies and presentations collaboratively, seeing one another's comments and changes as they are made. The service is integrated with existing desktop functions, such as e-mail and calendars.

This new capability has become a near-necessity for global executives, especially as they face a host of obligations, including family and increasing work-related global travel, says Tony Kmetty, associate director of the EMBA program at LBS. Says Kmetty, "Multimedia conferencing will stimulate the students' study groups and allow them to become more efficient with their time."

## TOOLS OF THE TRADE

### Clickers on Campus: Purdue Deploys Student Response System from eInstruction

Purdue University in West Lafayette, Indiana, has equipped computers in every classroom with an interactive student response system from eInstruction, a company based in Denton, Texas. The system uses a radio frequency receiver, handheld student response pads, and special software to facilitate quizzes, polls, and other activities that can be enhanced by immediate student input.

Purdue signed up for systemwide use on all its campuses last October and began installation in January. The use of radio frequency instead of infrared reduces the number of receivers needed and the amount of interference to their operation. In addition, new technology now allows students to carry a single \$12 "universal" clicker that works in every class, rather than separate clickers for each class, which lowers the cost of the system. As a result, Purdue has been able to deploy the system more quickly to more students. The number of Purdue students using clickers this semester will more than triple to almost 8,000.

So far, instructors credit the clickers with improving student attentiveness, participation, and attitudes. Professors use the system for everything from taking attendance, to playing educational games, to assessing student comprehension of lecture materials. "It increases the overall pass rate and narrows the gap between the most successful and least successful students," says Tolga Akcura, assistant professor of marketing at Purdue's Krannert School of Management.

Students like Brian Geddes also appreciate the new technology. "I quickly found out how well I was absorbing class material, and I saw where the rest of the class stood as well," says Geddes on using the response system. "My professor could identify which sections of the course material to cover in greater detail based on the results of quizzes we took using clickers."

In partnership with McGraw Hill, eInstruction has placed clickers at more than 600 institutions. For more information, visit [www.einstruction.com](http://www.einstruction.com).

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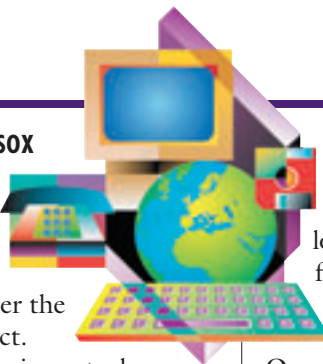
## NEWSBYTES

### ■ MARKETING GETS DIGITAL

The Manchester Metropolitan University Business School in the United Kingdom recently launched a degree in digital marketing and communications—the first in the country, according to school representatives. Based in the school's Department of Business and Information Technology, the degree is designed for students interested in advertising, public relations, and direct marketing. Digital marketing promises to be “one of the new hot areas” in the industry, says Ruth Ashford, program coordinator. “We believe that demand for this program will be high.”

### ■ IMs GONE UNDER SOX

According to *Computerworld*, instant messaging (IM) control requirements under the Sarbanes-Oxley Act. Concerned that their controls weren't robust enough to monitor, scan, and store employee IMs adequately, many companies are disabling the IM function in their networks altogether. Technological solutions that help make IM systems comply with SOX do exist, leading some analysts to posit that some companies simply may not want to deal with their employees' on-the-job IMs.



### ■ AWARD FOR INNOVATION

The online simulation “Littlefield Technologies,” which allows students to operate a virtual factory, has won a Wickham Skinner Teaching Innovation Award from the Production, Operations, and Management Society. The simulation was created by Sunil Kumar, an associate professor of operations, information, and technology at Stanford Graduate Business School in California; and Sam Wood, president of Responsive Learning Technologies in Los Altos, California. The simulation, which aims to teach students the nuances of operations, production, and business analysis, was first used at Stanford in 1997.

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## ■ FinEdx Brings Finance Education to Asia Pacific

Asia's increasing importance to the global economy has inspired a new campaign to boost financial literacy in the Asia Pacific region. As part of this campaign, INSEAD, which has campuses in Fontainebleau, France, and Singapore, recently launched FinEdx, an online information portal at [www.finedx.org](http://www.finedx.org). Made possible through a grant from Citi-Group Foundation, the new portal provides downloadable teaching materials to finance educators in the Asia Pacific region. The portal is designed to increase the number, quality, and accessibility of teaching programs so that people are able to make sound financial decisions.

FinEdx offers research reports, case studies, and impact assessment tools for financial education providers. The site, which so far has about 140 registered users, also features online discussion boards that allow financial education providers to interact and share best practices. Access to FinEdx will be free to educators for the first year; user fees in the second year have yet to be determined. 





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