
Posted on Sun, Nov. 05, 2006

U.S. Research Making Great Leap

By Bob Fernandez
Inquirer Staff Writer

PUDONG, China - U.S. factory workers were the first to lose jobs to low-cost Chinese labor.

Could research and technical employees be next?

U.S. companies say they won't be. But they are spending hundreds of millions of dollars building and staffing research centers like ones 30 minutes east of Shanghai's Huangpu River.

The companies here in the Zhang Jiang Hi-Tech Park, a surreal outcropping of dazzling glass-and-steel structures amid a landscape of small homes and produce farms, are familiar: DuPont Co., General Electric Co., Honeywell International Inc., and GlaxoSmithKline P.L.C., among dozens of others.

"The government tells you where you can build, and that is where you have to go," said Rohm & Haas Co. spokesman Ross Ma as he looked across the park's Zhang Heng Road, at a green-tinted double-cylindrical office complex that German chemical company Henkel KGaA is building.

Chinese laborers gather in the afternoon to shoot billiards in a shanty on one side of Henkel. On the other side, construction equipment clawed a hole where local officials say the Dow Chemical Co. is putting a 1,000-employee facility.

Eager to tap into China's pool of dirt-cheap engineers and technical employees who earn \$5,000 to \$10,000 a year, hundreds of European and U.S. companies have opened research centers throughout China in the last two years.

The Chinese government says foreign companies now run 750 centers in the country, with 400 built since mid-2004 in Beijing, Tianjin, Hangzhou, Guangzhou, Chengdu, Chongqing and Xian. The centers are typically in specially designated corporate parks, which are clustered around housing oriented to foreigners and have been granted favorable tax treatment.

Companies have different reasons for coming here. Many, like Rohm & Haas, say they are trying to crack into the huge and rapidly growing Chinese market with locally developed products. "We believe China is a very advanced country and they need the latest technology, and we can't keep it away from them," Rohm & Haas chief executive Raj Gupta said. He expects the specialty-chemical company's Chinese business, now at \$400 million a year in revenue, to double in the next five years.

Other companies say the Chinese research centers are extensions of global research endeavors and allow them to tap into the engineering workforce in China. As manufacturing plants shift to China from the United States and Europe, and other parts of Asia, research operations centers are following them.

The fastest to do so were consumer electronics and computer-chip companies. Intel Corp. now has 6,000 employees in China. Motorola Inc. is hiring hundreds of engineers in China this year, adding to its 10,000 employees and 17 research centers here. Motorola's Connected Home subsidiary, with 1,100 employees in Horsham, Montgomery County, has a separate engineering and manufacturing agreement with a Chinese company for cable TV receiver boxes.

Asian companies such as Toshiba Corp., Panasonic and Samsung Electronics Co. Ltd. employ tens of thousands of workers in China after having closed operations in Taiwan and South Korea.

"You have to be there because if you don't make it in China, you won't make it globally anymore," said James McGregor, who runs a business-consulting firm in China and is author of *One Billion Customers: Lessons From the Front Lines of Doing Business in China*.

Entering China

Rohm & Haas opened its research center in Pudong in late September and says it will develop paint additives for the 8,000 paint factories in China. The company also wants to be near electronics manufacturers who buy its processing chemicals. Those electronics manufacturers typically export their products, such as laptop computers.

"This is really playing to win... . We did not build this center because talent is cheaper over there," said Gary S. Calabrese, Rohm & Haas vice president and chief technology officer. The complex, which is also the Chinese headquarters for the company, employs 500, with the potential to reach 1,000.

But the impact will be felt in the United States. Within weeks of opening the Chinese research center, Rohm & Haas announced possible cutbacks in its U.S. operations as it reconfigures its operations by expanding in China and other emerging markets. The chemicals firm employs 16,500 worldwide, among them 3,300 in the Philadelphia area and northern Delaware.

Experts describe the Chinese research-building boom as "awesome" and "mushrooming." They say the lure of China is irresistible, with its 1.3 billion people and 10 percent economic growth. Costs are low. Research employees earn one-fifth what they would in the United States. Manufacturing workers earn \$150 a month.

"Some companies are afraid *not* to be in China because their competitors are there," said Marshall Meyer, a professor at the Wharton School. In some ways, it does not matter if they all lose money in China. "They will all lose or win together. So their relative standing in the [global] industry doesn't change."

But companies should be careful, warned Andrew C. Mertha, assistant professor of political science at Washington University in St. Louis and author of *The Politics of Piracy: Intellectual Property in Contemporary China*.

"If you've got a technology that is like three generations old, that might go to China," Mertha said. "Any company that takes its crown jewels to China, its most innovative technology, is asking to get them stolen."

Phila. artwork in Pudong

Four stories tall, with sun-drenched hallways and lobbies, the new Rohm & Haas research center boasts meeting rooms with flat-panel video displays and a Chinese rock-and-water garden in its central courtyard. Artwork from Philadelphia art schools purchased by the company hangs prominently on walls.

Located on several acres, the building cost \$30 million but looks pricier and could occupy a well-appointed corporate park in the Philadelphia suburbs. Rohm & Haas executives say the facility would have cost \$100 million in the United States. The reason: cheap Chinese construction labor.

Doris Li, 25, was one of the first employees hired for the new center. One day in early October, she mixed a batch of latex paint. Her task that day was to learn about ingredients and additives that give paint shine.

One room over, Lixing Wie, 27, and Danielle Liu, 29, talked quietly as they hovered around a scrubbing machine. Brushes peeled away white paint on a sample board. They were experimenting with paint durability.

Hartmann Huang, the greater China technical manager for Rohm & Haas, said hiring for the new Chinese research center, at least for low-level positions, had been easy. He held his hands far apart, illustrating the pile of resumes he received for new positions.

"If you are looking for first-year people, you can find anybody you like," Huang said, noting that two local universities graduated more than a hundred polymer-sciences students this year - part of a national push to expand the number of engineers and technical people in the country.

Dave Speece, technical director for architectural and functional coatings in the Asia-Pacific region, said Rohm & Haas found it could not use the company's Spring House research center in Lower Gwynedd, Montgomery County, to quickly serve the Chinese market. A paint sample could get lost in customs for weeks as it was shipped between the United States and China.

And Chinese issues do not always resonate with U.S. scientists. For instance, Chinese contractors habitually dilute paint with water and then have workers apply five or six coats to a wall. They do this because the cost of labor is cheap compared with the cost of paint. But this forces paint companies to develop paints that withstand dilution. Since Rohm & Haas supplies the additives to paint manufacturers, it needs to engineer additives that can withstand the diluting.

At the new center, Rohm & Haas is developing pollution-resistant outdoor paints to keep paint from looking dingy after exposure to China's toxic air. The center also is developing special paint additives for Chinese construction. The Chinese build primarily with concrete, which develops cracks.

"We were seeing a lot of competition from local players, and we want to customize products," said Speece, who estimates that Rohm & Haas faces about 100 Chinese competitors. "We are going to have to move with the speed of a small company."

View from Sixth & Market

In an interview in Philadelphia, Rohm & Haas' Gupta said the company's Chinese business had grown from \$10 million in revenue and 15 employees in 1993 to the estimated \$400 million in revenue and more than 1,000 employees in 2006.

Currently, Rohm & Haas has six manufacturing plants in mainland China and one in Hong Kong. Gupta said the paint market was growing 15 percent a year in China, which is the company's third- or fourth-largest market in the world for paints. "It has grown enormously," he said.

Ian Penboss, a Rohm & Haas regional-market manager in the Asia-Pacific region, agrees that the Chinese paint market has modernized in a short time. "Ten years ago, it was what color of white do you want," he said.

He has also noticed that most major paint companies are trying to be players here, with factories and research. "Everybody's investing heaps into China, but not everyone will survive," he said.

Contact staff writer Bob Fernandez at 215-854-5897 or bob.fernandez@phillynews.com.