

India's Edge goes beyond Outsourcing

Outsourcing is breaking out of the back office.

For years, most service industry jobs that were moved to countries like India were considered relatively low-skill tasks like answering customer inquiries. But that has been changing in recent years, and increasingly the jobs of Western white-collar elites in fields as diverse as investment banking, aircraft engineering and pharmaceutical research have begun flowing to India and a few other developing countries.

In the view of most specialists on the phenomenon, the kinds of jobs that cannot be outsourced are slowly evaporating.

Boeing and Airbus now employ hundreds of Indians in challenging tasks like writing software for next-generation cockpits and building systems to prevent airborne collisions. Investment banks like Morgan Stanley are hiring Indians to analyze American stocks, jobs that commonly pay six-figure salaries on Wall Street.

The drug maker Eli Lilly recently handed over a molecule it discovered to an Indian company, which will be paid \$500,000 to \$1.5 million a year per scientist to ready the drug for commercial use — work that would be significantly more costly if carried out by Americans.

With multinationals employing tens of thousands of Indians, some are beginning to treat the country like a second headquarters, sending senior executives with global responsibilities to work there. For example, Cisco Systems, the leading maker of communications equipment, has decided that 20 percent of its top talent should be in India within five years; it recently moved one of its highest-ranking executives, Wim Elfrink, to Bangalore, the center of the Indian industry, as chief globalization officer.

Accenture, the global consulting giant, has its worldwide head of business-process outsourcing in Bangalore; by December it expects to have more employees in India than in the United States.

This is not a zero-sum game, in which every job added in India comes at the expense of an American or European one.

In many ways, the shift reflects a changing view at multinational companies as they find it easier to meet growing demand by taking advantage of the improved skills of newly educated people in the developing world. And some companies are returning certain jobs to the United States, finding that the work in India and elsewhere is not up to snuff.

But there are trade-offs as well. As Indian back offices become more sophisticated, Western companies are finding that large parts of their work, even high-end tasks, can also be done from India. From the consumer perspective, India has emerged as a pool of 1.1 billion potential customers for companies seeking faster growth. And so many companies are shifting their energy to where they see their futures being written.

"India is at the epicenter of the flat world," said Michael J. Cannon-Brookes, vice president for business development in India and China at I.B.M., which has reduced its American work force by 31,000 since 1992 even as its Indian staff mushroomed to 52,000 from zero.

"It's one of the world's two biggest pools of high-value skills, which we want to leverage both to help clients in the domestic marketplace and to help clients globally," he said. "The two play off each other."

The increasing interest of Western companies in rapidly developing countries like India, China and Brazil came to the fore last week. Reports emerged during a visit to New Delhi by Citigroup's chairman, Charles O. Prince III, that the company planned to eliminate or reassign at least 26,000 jobs, 8 percent of its staff. It will move many jobs to less costly American cities, and others to India.

The bank has 22,000 employees in India, who are not part of the cuts. That reflects its role as Citigroup's fastest-growing international market in terms of revenue, said Mr. Prince, who predicted that overseas operations would supply most of Citigroup's growth.

To underline the shifting geography of opportunity, Mr. Prince suggested days after the planned cuts became known that he would increase Citigroup's Asian work force by more than 10,000, through acquisition of banks in Japan and Taiwan.

Still, specialists warned that a continued flow of work to India required drastic improvements in its educational system and basic facilities. Water and power shortages are endemic, and industry experts predict that India could lack 500,000 engineers by 2010. Yet the country has already tapped a deep well of English-speaking engineers, attracting more outsourced work than any other country.

Alan S. Blinder, a former vice chairman of the Federal Reserve and economic adviser to President Bill Clinton, recently described outsourcing as a "third Industrial Revolution" that, by his estimate, poses a risk to the employment of as many as 28 million to 42 million workers in the United States.

"We have so far barely seen the tip of the offshoring iceberg, the eventual dimensions of which may be staggering," he wrote in the journal *Foreign Affairs*.

But Mr. Blinder, who teaches at Princeton, added that the consequence should not be large-scale unemployment but a shift in Western job markets.

The West, he argued, would shed jobs in easily outsourced fields, like accounting, and increase work among jobs like police officers and doctors, which must be done in person.

At the forefront of the outsourcing business is Infosys Technologies, an Indian company that has pursued a strategy of reinvesting the profits from low-skilled work into a vast upgrading of skills to prove itself to Western companies and fend off rivals from China, Eastern Europe and elsewhere.

Infosys devotes \$65 of every \$1,000 in revenue to training. I.B.M., by contrast, spends just \$6.56, according to a 2006 proxy statement.

A few years ago, Airbus and Boeing were outsourcing work like digitizing old hand drawings. But they have begun to rely on their Indian suppliers for even more complex work, hiring aerospace engineers from state-owned aviation companies and scholars from Indian engineering colleges.

Airbus hired Infosys, which is based in Bangalore, to design part of the wing of the superjumbo A380 aircraft. It is working with another supplier, Tata Consultancy Services, to build software for cockpits, with up to half of the hundreds of switches removed and replaced by touch screens. Airbus has hired a third Indian company to design and build jet doors.

In the forthcoming Boeing 787, two critical systems — one to avert collisions in flight and another to land in zero visibility — will be built to a substantial degree by HCL Technologies, an outsourcing firm that has its headquarters outside New Delhi.

"In theory, we could place the work anywhere," said Ian Q. R. Thomas, the president of Boeing India. "We're here because we found a level of sophistication."

Investment banks like Morgan Stanley, which have used Indians for basic research, are now hiring them to write reports for institutional investors on American and European stocks.

“Our analysts will cover equities on their own,” said an advertisement posted on an Indian career site last year by Thomas Weisel Partners, an American investment bank. “They do not report to another analyst in the U.S. They will do their own research, come up with their own opinions on the stock and offer them directly to U.S. institutional investors. Simply put, we are not a back office in India.”

And in the complex world of pharmaceutical research, Western companies have evolved from outsourcing slivers of research to India to outsourcing whole phases of drug development.

Eli Lilly’s deal with Nicholas Piramal, an Indian company, sent ripples through the industry. Lilly turned over ownership of a patented molecule it had discovered to Nicholas Piramal to usher the drug through the first two phases of clinical development, including the first human tests of the drugs. Moreover, Nicholas Piramal agreed to bear the risk of the project’s failing, in exchange for much larger royalty payments if it succeeded.

“Nicholas will do the whole thing, at their expense, at their own risk,” said Gino Santini, a senior vice president at Lilly.

High-end outsourcing is only half the reason that companies are investing so heavily in India, executives say. As India has become a more lucrative market in its own right, many Western companies are looking to take advantage of its vast potential market for growth.

And many executives argue that having a growing market and an outsourcing hub in the same place enriches innovation.

Having actual customers at the doorstep makes employees think more creatively about the problems of their own society, according to Ravi Venkatesan, the chairman of Microsoft India. Now that the Indian workers have more autonomy, he said, they are focusing on problems, like building software for the illiterate, that might not have occurred to American researchers.