

Outsourcing: Job Killer or Innovation Boost?

What's one to make of two recent, and diverging, Duke University studies of outsourcing's impact on the U.S. engineering workforce?

by [Pete Engardio](#)

Ever since the offshore shift of engineering work blew up into a national issue four years ago, a question has nagged at economists and policy makers: Is outsourcing hurting America's engineering workforce? Or is it actually boosting engineering careers by making U.S. tech companies more competitive and allowing them to deploy engineers more effectively?

Duke University has been at the forefront of assessing this issue with two major research projects—one by the Fuqua School of Business and the other by Pratt School of Engineering. What's interesting is that the two studies, both involving surveys of U.S. executives, are coming to completely different conclusions. One finds that companies are going offshore because they are desperate for talent and are shifting more complex work to nations such as India and China for strategic reasons. The other Duke study concludes that the offshoring phenomenon is all about cost and that there is no shortage of engineers in the U.S. Therefore, the labor shift is coming at the expense of U.S. jobs.

Overseas Innovation

How to reconcile such radically different findings? Authors of the dueling Duke studies offer several reasons—such as different ways of asking questions and the types of engineers they focused on. Whatever the reasons, it's probably no coincidence that the Fuqua study supports the perspective of Big Business, while the Pratt study reflects the interests of U.S. engineers.

The more ambitious of the two is the Fuqua study, a collaboration with consulting firm Booz Allen Hamilton. The third annual study surveyed 537 companies in the U.S. and Europe. The final report is due this week. Among the key findings is that while labor cost remains the main driver for hiring engineers in India, China, and Eastern Europe, the scramble to find tech talent is catching up fast. While less than 40% of companies cited "access to qualified personnel" as a key driver in 2004, that number now is close to 70%.

Multinationals are also increasingly citing strategic reasons for going offshore, such as the ability to crunch product-development times by working 24/7 with tech centers around the world. Half of respondents cited the need to "increase speed to market," compared with 30% in 2004. "Now companies are offshoring innovation and product

development," says Duke business professor Arie Lewin, who led the Fuqua study. The finding supports trends described in *BusinessWeek* stories in the past two years based on anecdotal examples (see BusinessWeek.com, 2/31/05, "[Outsourcing Innovation](#)").

But the Fuqua report is the first to verify the strength of the trend with hard data.

Talent Gap

Lewin says the Fuqua study's findings suggest that offshoring is not replacing skilled jobs in the U.S. While corporations have shed workers by shifting more routine back-office processing jobs to developing nations, in three of four cases involving the offshoring of R&D and product design, no U.S. staff were fired. Indeed, companies are going abroad because they cannot find enough talent at home.

He attributes the talent crunch to the sharp cut in temporary work visas and declining enrollments in U.S. science and engineering programs, especially at the master's and doctorate levels. "The issue no longer is cost but availability of talent. The data is very clear on this," Lewin says. "A significant talent gap has risen between 1995 and 2006, and that's a problem for companies that depend on engineering talent."

Lower Salaries

The Pratt study contradicts all of these assertions. It sent questionnaires to senior executives of corporations on a list compiled by CNN anchor Lou Dobbs. He claims these companies are exporting American jobs. Seventy-eight executives from 58 companies responded. Leading the study was Vivek Wadhwa, an Indian-born tech entrepreneur now teaching at Duke (and contributor to BusinessWeek.com), research scholar Ben Rissing, and Gary Gereffi, director of Duke's Center on Globalization.

Its chief finding is that there are more than enough U.S. engineers, and companies mainly are going abroad to cut costs. It also concludes there is a major qualitative difference between engineers in the U.S. and in developing nations such as China. As a result, companies are not moving work involving such things as research, conceptual design, customer interactions, or business analysis.

One reason Pratt got different answers to the issue of engineering skill shortages is that it asked different questions, Wadhwa says. "We asked point blank about things like what their acceptance rate is for U.S. applicants. We asked how long it takes to fill a position," he says. "When you look at the data, it suggests they can fill positions in the U.S. So why go overseas?" The answer is to take advantage of low salaries, he says.

Honest Answers?

Lewin says the two studies also focused on different talent pools. The Pratt study emphasizes abundant supplies of U.S. engineers with four-year degrees. But the most intense demand in Western corporations is for master's and doctorate-level engineers,

Lewin asserts. "When you look at people with higher levels of skills, they also have significantly higher salaries," he says, an indicator of intense demand. Also, numbers of U.S. engineering bachelor's degrees aren't a good measure because so many graduates enter careers other than engineering.

Wadhwa doesn't buy that argument, either. In the Pratt survey, 57% of companies said they don't care whether a job candidate has a four-year degree. In fact, many are hiring engineers with two or three years of college in India and China and then training them at their own facilities or sending them to engineering schools with specialized programs. Meanwhile, many U.S. graduates with two, three, or four years of college are finding few job offers.

Which of these dueling Duke studies are you to believe? It all depends, of course, on which survey received more honest answers from companies. Whatever team of researchers is closer to the truth as they track the subject in the coming years, Duke is sure to provide ample ammunition to both sides.

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