India, US asleep as China races ahead in research: study

The United States and India seem asleep at the wheel while China races ahead with the outsourcing of critical research and design likely to become the next trend, according to a new study.

'Outsourcing will continue and gain momentum, but this is not what we (US) have to worry the most about,' says Vivek Wadhwa, Executive in Residence at Duke University's Pratt School of Engineering, who led the research.

'What our new research highlights is that we're fixing the wrong problems,' said the Delhi-born co-founder of two technology companies about his team's research on India/China engineering education to be published by National Academy of Sciences magazine - 'Issues in Science and Technology'.

The new study, updating a 2005 study on the engineering graduation rates of India/China and the US, raises concerns that China is racing ahead of the US and India in its ability to perform basic research.

Wadhwa said the earlier report corrected the myths about India and China graduating 12 times as many bachelors level engineers as the US, and the US being in trouble because of this. It had reported that the US actually graduates a comparable number of such engineers, and reported serious problems with the quality of Indian and Chinese graduates and predicted shortages in India and unemployment in China.

'It seems we were right. China's National Reform Commission reported that the majority of its 2006 graduates will not find work, and there have been several reports about engineering shortages in India,' he noted.

The new study suggests US can't continue to depend on foreign students to fill its graduate and post-graduate programmes for as the economies of India and China improve, they will start returning home.

Broad and informed solutions are therefore needed to fix the problem of research going offshore, it said suggesting that while US improves its education, it needs to welcome skilled immigrants.

For even if the US fixed K-12 education - as primary and secondary education up to grade 12 is designated in North America - as Senate majority leader Harry Reid and others are rightfully advocating, it would take 10-15 years before it saw the benefits. By then the US would have lost its competitive edge.

And if the US simply increased graduation rates, its graduates would suffer the same fate as Chinese graduates - unemployment and dropping salaries, the Duke University study suggested.

Here are some of the highlights:

* It is not the education of Indian and Chinese workers that is causing outsourcing or a deficiency in the American workforce - it's all about cost savings. There is no shortage of engineers in the US.

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* Outsourcing will continue and build momentum and what will go next is research and design. The loss of R and D is what poses the real threat to US competitiveness.

* These new jobs will require more Masters and PhD's.

* China now graduates more Masters and PhD's in engineering than the US over a 10-year period, India and US graduation rates have shown relatively very small increases.

* India's engineering PhD's numbers have remained flat - less than 1,000 per year, while China graduated 9,427 in 2005 and the US graduated 7,333. India does not even graduate enough to staff its growing universities.

* Multinationals can hire from most colleges in India but they can't hire from other than 10-15 schools in China.

* India has serious problems in quantity and quality, but private enterprise has been India's salvation - private colleges and 'finishing schools' make up for the deficiencies.

* Starting in 1999, China flooded the market with bachelor's level graduates to bring elite education to the masses and to drive down salaries and costs.

* This created massive unemployment, and the vast majority of these graduates won't find work. China has now slowed down.

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