

Envisioning the Future of India's Software Services Business

Forecasting coming challenges for Indian software companies.

Earlier this year I gave a speech in India at a conference sponsored by the National Association of Software and Services Companies (NASSCOM). This gave me an opportunity to reflect on what the Indian software business has achieved and what its future might be. The other main speaker, Thomas Friedman of the *New York Times*, offered considerable food for thought as well. He spoke about his recent book and how information technology had made it possible for Indians to take over software engineering and other high-tech and medium-tech jobs from countries around the world. India clearly has done well, and some of this newfound wealth is trickling down at least to a growing middle class. But, rather than continue to pat India on the back for a job well done, I decided to talk about potential future challenges to the prosperity of the Indian software busi-

ness. If the world is indeed flat, as Friedman argues, other nations will try to do what India has done.

India's achievements are truly astounding and worth recounting. Growth rates for the largest Indian software companies have been slowing slightly, but they still have been approximately 30% per year. The largest firms in terms of recent revenues were Tata Consulting Services, Infosys, Wipro, HCL Technologies, and Patni Computer Systems. (Full disclosure: I am a member of the board of directors of Patni.) Overall, according to NASSCOM, India's software services industry generated about \$10 billion in 2005 in export revenues, mostly

from custom software development and maintenance. Domestic software services were smaller but still significant—approximately \$3.5 billion in sales. Domestic engineering services, R&D, and software product sales were still relatively tiny but growing—approximately \$700 million in 2005, compared to \$400 million in 2004. NASSCOM estimates that total software and services sales will reach nearly \$30 billion in 2006, of which about 80% will be exports.¹ In terms of process maturity, the Indian companies are difficult to beat as well: It is well known that, as of last year's count, 80 of the World's 117 SEI CMM Level-5 companies are based in India.

¹Indian IT Industry: *NASSCOM Analysis*; www.nasscom.in/upload/5216/Indian_IT_Industry_Factsheet_2006.pdf.

I discussed in a previous column and in my last book that the global software products business has been struggling over the past half-dozen years. The number of successful product companies has declined markedly and much of the revenues in the industry have shifted to services, including maintenance. So software services companies seem to be in the right place at the right time. But how rosy do future times look for the Indian software business? Good perhaps, but not as good as the past. I see several major challenges.

One problem is that the Indian companies appear pretty much the same and don't seem to think much in terms of strategic differentiation. They are increasingly competing on price. Infosys alone seems able to compete more on reputation and experience, and charge higher fees than the competition. But it still offers what the other companies offer and vice versa, so I am not sure how long Infosys will remain so profitable. All the top Indian software companies look far too much alike in terms of technical capabilities. They are all CMM Level-5 organizations, they all can build just about any type of software, they all can guarantee high levels of quality at relatively low prices, and they all promise global delivery capabilities—they can service customers anywhere around the world.

The future looks fine as long as custom software, maintenance, and outsourcing work continue to

flow to India, which it should for many years to come. But price competition is increasing among the Indian players. This means revenue and especially profits and market valuations will not grow as fast as they have in the past. Moreover, the big Indian software companies must compete for people and business with rapidly growing offshore subsidiaries of their biggest customers, including General Electric, Fidelity Investments, and nearly every major technology company in the U.S. and Europe. True, India has nearly an unlimited supply of people and graduates thousands of engineers each year. But India does not have an unlimited supply of *experienced* people in software engineering and project management, and everyone's wages are rising. NASSCOM estimates the cost savings of outsourcing to India as between 20% and 60%; my experience tells me it is about 40% and falling. India's wages may be one-fourth of what U.S. programmers get, but they are rising. And there are other costs of doing business in India, such as traveling back and forth to customer sites, formalizing specifications, redoing work because of communications difficulties, and the usual need for iterative development.

A second problem is a potential future battle between the world's major enterprise software and hardware companies—including IBM, Hewlett-Packard, SAP, and Oracle, which generate a lot of work for the Indi-

ans—as well as global IT consulting firms such as EDS and Accenture. The products business is declining as customers turn to free and open source solutions as well as fight back against paying high license fees and annual maintenance fees. In the U.S., companies such as Salesforce.com are offering less expensive alternatives that bundle license fees and maintenance in the form of “software as a service.” Many other software product vendors are gradually following suit with more flexible (and often heavily discounted) payment or subscription schemes.

Furthermore, my research indicates that, in 2004, less than half the revenues for software products companies listed on U.S. stock exchanges came from products, including maintenance, compared to approximately 65% in 1995. Many of these companies will have to fight the Indian firms for these revenues or go bankrupt or find themselves acquired by some larger software company—the fate that, for example, J.D. Edwards, PeopleSoft, and Siebel recently experienced at the hands of Oracle. I predict that many large software products companies, led by Oracle, will fight the Indian software companies by creating their own offshore facilities to take advantage of low-wage talent—in India, but also in China, Southeast Asia, Russia, Ukraine, central and Eastern Europe, and elsewhere. The U.S. will also look increasingly reasonable as a site for software development if wages around the world continue to rise.

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Which brings us to a third problem: global competition from other developing countries or industrialized nations that are trying to duplicate what India has done. My recent column on the Russian software industry (see the February 2006 issue of *Communications*) described how active Russia, Ukraine, and other former Soviet republics are becoming in establishing companies to go after this outsourcing software business. They don't speak English nearly as well as the Indians do, but their infrastructure is as good or better, their education is often more advanced (producing many Ph.D.s in math and physics), their wages are comparable, and their companies are much closer geographically to European and U.S. customers. The Chinese are coming in as well, with fewer outsourcing firms but great potential as a site for even more offshore development, and China is much closer to the huge Japanese and Korean markets. Not many IT services firms have the scale of the Indian firms, which can handle projects of just about any size. But these non-Indian firms will grow,

and offshore competition from other low-wage high-skill areas of the world will continue to intensify. The only answer to this threat is for the Indian companies to establish their own offshore sites in other hot spots for software development and engineering services that have lower costs than Bangalore, or explore regional cities in India. My guess is that the Indian companies will be slow to become true multinationals, however. Their strength is the organizational base in India and the management skills they have honed and applied there.

A fourth problem is more complex: the paucity of products companies in India that have the potential to generate not only new product revenues but, more importantly, a future stream of services and maintenance revenues for which U.S., European, and Japanese companies will not compete. We see some product startups being established in India, but there could be many more, given the level of talent and the enthusiasm for entrepreneurship. The large, complex enterprise applications offered by

the likes of SAP and Oracle, or even Microsoft, are often still too expensive and functionally rich for the customers in developing areas like India, China, Brazil, Mexico, Southeast Asia, Africa, and Russia. More Indian software engineers should put their skills toward developing unique products that generate services and maintenance rather than servicing the products of other firms in other countries. Even though the products business has been under great pricing pressure in the U.S. and Europe, products are still the engines that drive new service and maintenance revenues. Building more of their own products for new generations of computer systems, handheld devices, and wireless content or telecommunications services is one way for India to develop a more balanced software industry that can better control its own fate. **■**

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