India’s software development curve

Barbara Bauer

Barbara Bauer is vice president of Software Engineering and Development at StorageTek, a public company headquartered in Louisville, Colorado, with over 7,000 employees located in 32 countries. Prior to StorageTek, Bauer led a consulting firm BTB Associates, Inc., where her major initiatives were software engineering assessments, enterprise solution implementation planning for large companies and program and project management. She was also an executive at US West where she led an initiative to achieve CMM L2 for the corporate and e-business software development organizations. Her academic credentials include a BS and MS in physics and the Stanford Executive Program.

There are many challenges connected to the outsourcing of complex software development projects but “the hardest part is finding the combination of people who are experienced and who understand the business of the company and the technologies that can serve that business,” said Barbara Bauer, in her address to the Global Executive Forum. Bauer drew on her experience at StorageTek to define the issues and provide insights into India’s strengths and weaknesses.

Traditionally a company that builds tape drives and disk drives, StorageTek is now building a suite of software products that “we believe can transform the marketplace relative to storage technologies.”

The complexity of the products and the need for quality, predictability and time-to-market are motivating factors in StorageTek’s decision “to look for partners in India where IT workers have capacity we couldn’t find in the US,” said Bauer. Also, “Indian companies have a structure about how to do this work in a way that enables it to be managed remotely.”

But identifying companies that have unique technologies has become very complicated and new companies are springing up overnight. Bauer has found that “boutique and niche firms are learning how to do product development and they are offering products to us that we can imbed in our solutions. They will become the technology product companies of the future.”

Once the need for quality is satisfied, costs enter the equation when deciding on a location. “The cost per engineer in the US, Japan and Europe can range from four-five times higher than an engineer in India.

“A key project offshore with a large team enables substantial cost savings. Consequently, StorageTek has been able to invest in two more projects and the net result is the creation of more jobs in the US.

“My head count in Louisville is going up this year as a result of our ability to get some of these products to market and begin to generate revenue.”

While there are savings in labor costs, there are invisible costs that should be factored into outsourcing or offshoring such as communications and the time it takes to transition the work from one country to another. According to CIO magazine, Bauer said, “A full year of issues and reduced effectiveness should be anticipated.”

Despite the fact that Indians and Americans speak a common language, cultural differences can hamper communication. “A very positive aspect of the culture in India is that people are very respectful and well-mannered – so much so that they are reluctant to deliver bad news. The person on the India team is not apt to tell you ‘we’re bleeding red and we need to do something differently.’ We work hard on addressing this problem through metric systems and status reports but with mixed success.”
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Indians will assign a literal meaning to the spoken word so “assume that exactly what you ask for will occur, which is usually not what you really want.”

Potential problems

The India experience is uneven. “The infrastructure is not keeping up. Roads and telecom are limiting our ability to actually take advantage of people over there.” And looking ahead at where the next crop of software engineers will come from, Bauer sees potential problems.

“I think we need to make changes in the education system both in the US and India. There is insufficient cross learning between technology education and business education. The people I have in my engineering organizations are frequently very good technologists but they have a hard time understanding a business plan.”

And there aren’t enough people skilled in the old technologies. “We need mainframe skills,” said Bauer. “Everyone thought that mainframes, those gargantuan machines that predate PCs, were heading for obsolescence but that hasn’t happened,” she said. “Every large bank in the world has IBM mainframes and they will have them for a long time. But mainframe skills are dying in India because the education has been focused on the emerging open systems domain.”

Perhaps equally disturbing is “an aspect of rigidity in India’s educational system which is limiting to the creativity of the technologists that we work with. If India figures out how to introduce that element of creativity, they will be an incredible force in terms of this sort of software development.”

In fact, said Bauer, “the next Bill Gates may already be in India.”