

## On the Offshore Outsourcing of IT Projects: Status and Issues

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Today countries such as India and China have thriving information technology (IT) industries performing projects that the US, Western Europe, and Japan have outsourced to take advantage of the substantially lower labor costs there. These countries have been able to service many small and large outsourced projects by deploying large numbers of workers skilled in the basics of IT. Although the current outsourcing practices afford certain benefits to the outsourcing countries, the migration of jobs and the large-scale rapid advances in IT in the countries that service the outsourced projects may have some troubling impacts on the outsourcing countries. In this article, I will review the status of the outsourcing practices, and consider the potential impacts on both sides of outsourcing.

### 1 STATUS

About 15 years ago, I attended a large trade show in the US. There I came across a few booths set up by Indian companies looking for clients who would outsource software projects to them. Each of the booths was of the smallest size in the trade show, inexpensive-looking, and manned by one company representative. The booths drew almost no attention from the show attendees. Two years ago, when India and Pakistan were on the brink of an all-out war after Pakistan-supported Muslim terrorists attacked the Indian Parliament and launched an offensive on the Indian-controlled Kashmir territory between India and Pakistan. The war was averted largely due to intense international pressures on both countries. Afterwards, it was also reported that one decisive factor that stopped India from escalating the tension one final and fatal step was an appeal from India's massive IT (mainly software) industry that a war would destroy the IT industry that had been built on outsourced IT projects from the United States and Europe. In a span of some 15 years, India has managed to build a powerhouse IT industry, to a good extent, by winning numerous small and large outsourced IT projects and call-center functions for IT products, both software and hardware. In the fiscal year that ended in March 2003, India's IT industry revenue was \$12 billion, and \$9.5 billion of this was from outsourced IT projects and services [RAI 2004]. Many large IT companies in the US now have a good part of their software products developed and tested in India.

Some outsource projects to Indian companies, while others use wholly owned satellite organizations or joint ventures with Indian companies.

Several factors have made India's improbable success possible. These include substantially cheaper labor costs (compared to that of the US, Western Europe, and Japan), the existence of high-caliber universities that turn out a large pool of workers well-trained in the basics of IT, the fact that most people understand English, and the talent and work ethics of the work force.

As India's success became apparent, other countries in Asia aggressively seeking economic development started emulating India's model. Several years ago, China started courting outsourced IT projects on the strength of low labor costs and a large pool of workers skilled in the basics of IT. Like India, China has some very high-caliber universities that turn out a large pool of well-trained IT workers, and the work force matches that of India in talent, aspirations and work ethics.

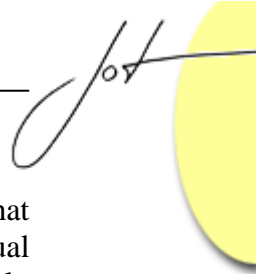
It is generally known that IT workers in these countries are just as capable as their counterparts in the US, Western Europe, and Japan, in most aspects of IT product development. However, often the work force in these countries lacks "senior" skilled workers, such as those who can architect complex products, and those who can lead large development projects. The companies that outsource projects often use their own architects and project managers to ensure success of the projects.

The labor cost in India and China is said to be about 20% of that in the US. Often, this very substantial cost advantage is not realized fully. As competition for skilled workers in these countries has become intense, the companies that perform outsourced IT projects have experienced rather high employee turnover rates. As a result, some companies often assign two workers to a task that really requires one worker, so that when one worker leaves the project, the other may stay on and complete the task. An additional cost to the outsourcing companies is that needed to send architects and project managers.

## 2 SUCCESS FACTORS

Countries such as Vietnam, the Philippines, Singapore, Malaysia, and even Nepal, where the labor cost is much lower than in the US, Western Europe, and Japan, all seek to emulate India's and China's success in building IT industries. Only a small number of these countries are likely to succeed. US and Japanese business managers think that countries such as Vietnam, the Philippines, Russia, and Brazil are likely to succeed.

The critical success factors, from the perspective of the countries that receive outsourced projects, include the existence of high-caliber universities that can turn out workers well-trained in most of the IT tools of trade. The number of such workers needs to be substantial, thousands to tens of thousands, in order to form and sustain an entire industry. To sustain over a long period an industry that performs outsourced projects, the industry must deliver high-quality work output. This requires the work force to combine talents with strong work ethics. Further, the IT industry in countries with advanced IT is



zealously protective of the intellectual property rights. This means that the countries that take outsourced IT projects really need to educate their workers to respect intellectual property rights of the companies that outsource projects to them. This may be particularly problematic in China where pirated copies of IT products and contents (e.g., movies on DVDs, music on CDs) have been known to flow widely, and the government is not known for vigorous enforcement of intellectual property laws.

The countries may also offer a variety of incentives to the companies that consider outsourcing IT projects. The incentives may include tax benefits, preferential consideration when selecting products for use in government-funded IT-infrastructure construction projects, cheap land on which to construct office buildings, etc.

### 3 ISSUES

The countries that receive outsourced projects do not have much to lose. They receive payments from overseas companies for their services. The money feeds a good part of their population. The IT projects serve to train their workers, beyond their university classroom training, on leading-edge, commercial products. The workers learn the internals of complex commercial IT products, the process of developing and upgrading such products, how such products are used by the customers, some of the problems such products have that might shed important insight into new product ideas, etc. While striving to sustain the industry, these countries get to elevate the quality of education in their universities and secondary schools.

For those countries that outsource IT projects, however, the consequences of outsourcing are not all positive. Clearly, the companies that outsource projects can reap benefits at least for the short term. Provided of course that they find the right partners and manage the projects properly, they can significantly reduce the cost of developing products. The cost savings help increase the companies' profits, which tend to boost their stock prices, which in turn can help the companies create wealth for their shareholders and to make further investment in their businesses. The cost reduction in developing products and supporting customers can potentially result in controlling or even lowering the price of the products and services for the customers. (Companies are not likely to voluntarily reduce the price of their products and services even when the cost of producing and supporting the products goes down, unless competitors and customers press them.) Further, depending on the concessions they may receive from the host countries, they may receive certain benefits such as reduced tax, inside track opportunities to sell the products in those countries, etc.

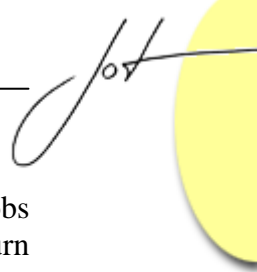
As the economy further grows and pay scale goes up in the countries that perform outsourced IT projects, financial incentives for the outsourcing countries will become weaker. However, as long as the outsourcing countries receive high quality work at a significant cost advantage, they will continue to outsource IT projects, unless their governments erect legal barriers or offer financial incentives. During the fourth quarter of 2003, India's top three outsourcing companies – InfoSys Technologies, Satyam

Computer Services, and Wipro Technologies – reported average revenue growth of 35% [InfoWeek 2004].

From the perspective of the countries (not the companies) that outsource projects, however, outsourcing IT projects on a large scale has some troubling consequences. When companies in one country outsource projects to companies in another country, in essence jobs move from one country to another. At the end of 2002, Forrester Research reported that by 2015 3,300,000 IT jobs will have moved from the US to other countries. In July 2003, Gartner Group reported that 5% of IT jobs will have moved from the US to other countries between the middle of 2003 and the end of 2004. As a result of such warnings and rising political debates, what may be initial steps to stem the outsourcing trends are being taken in the US. At the end of 2003, the state of Indiana in the US canceled an outsourcing contract with India's Tata Consulting valued at \$15 million. In January 2004, the US Senate passed legislation that prohibits the outsourcing of IT projects funded by the US Federal Government. Some ten US state governments are planning similar legislation for projects funded by the state governments. Some US Senators are starting to question whether IT projects should be outsourced to countries that do not meet certain labor and environmental standards. Understandably, Indian companies complain that any protectionist legislation runs counter to the principle of free trade among nations. Some US-based multinational companies even claim that such impediments to unfettered outsourcing of IT projects may even force some US companies into bankruptcy. I believe such dire protests are without much merit; after all, US companies did well up to 15 years ago when they did not do much IT project outsourcing to countries with cheap labor costs.

What the US government will no doubt consider is the potential erosion of the US's dominant position in the world in the creation and dissemination of IT, and the economic advantages such dominance has accorded it thus far. Even before the outsourcing of IT projects has become fashionable, US-based multinational companies have set up engineering and customer technical support organizations in many countries around the world. Such organizations have hired and trained local workers over the years. However, there is no question that the outsourced IT projects have created hundreds of thousands of additional jobs and skilled workers in such countries as India and China. The big pool of experienced IT workers in such countries means that in the foreseeable future the workers who currently perform outsourced projects on behalf of US companies will be in a position to conceive and create a wide variety of IT products of their own, ranging from minor to strategic products. They will distribute such products to new markets and compete effectively against comparable US-based products on the strength of lower cost, local connections, and acceptable quality. There have not been very many foreign IT companies that have carved out substantial market shares in the US. Such companies as SAP, Business Objects, Cognos, etc. are exceptions. As such, the prospect of major success in the US by possible future India and China-based IT companies is not clear. However, no doubt such companies will make serious efforts to enter the US market.

For over a decade, the IT industry in the US has depended to a great extent on foreign-born but US-trained scientists and engineers, and has even had to import workers



from India, China, and other countries on H1 temporary work visa. The exodus of IT jobs from the US is likely to further erode US-based pool of skilled IT workers and in turn further depress the number of students who will choose to major in IT fields. This can seriously degrade the US's ability to retain its supremacy in military technology and in space exploration programs, since modern military and space technologies rely heavily on IT. Fighter jets, tanks, artilleries, missiles, submarines, torpedoes, etc. are all controlled by sophisticated software running on special and general-purpose computers. Soldiers are equipped with combat uniforms, weapons and communication devices that are all based on information technologies. The space exploration programs, involving spacecrafts and robotic vehicles, their control and communications over long distances, and analyses of data gathered by satellites and robots, all require sophisticated IT. The depletion of the pool of skilled workers who must work on the development of future military and space exploration technologies will be a very serious concern for the US government, as it has always regarded its military supremacy as critical for national security and as a component of its geopolitical diplomacy. The nature of the longer-term relationship between the US and China (and India, too, for that matter) is difficult to predict. China may be able to maintain the current pace of its economic development and become an economic superpower that rivals the US in the next 15 to 20 years. The economic development and spread of higher education will tend to make China become a democracy, and a good and benign citizen of the world. However, China has some serious domestic problems each of whose resolution may have unforeseen consequences, such as the Taiwan issue, the political system controlled by the increasingly irrelevant Communist Party, the widening gap between the emerging rich in coastal cities such as Shanghai and dirt poor inner regions of the vast country, some provinces of ethnic minorities that want to secede from China, continuous outbreak of deadly diseases such as SARS, etc. If China will use its economic power to become a geopolitical superpower (unlike Japan during the past two decades despite its economic might), and for whatever reason China's national interests collide with those of the US, the two nations will become bitter adversaries in the Asia Pacific region. The fundamental racial and cultural differences between the two nations, and the history and geography of China, can contribute to this unhappy but possible scenario. Such considerations are likely to cause the US to be guarded about relinquishing supremacy in IT, and, therefore, military technology, to China (or any other country for that matter). As such, the outsourcing of IT projects to China (and, to a lesser extent, India) may be particularly troubling to the US government.

## REFERENCES

- [InfoWeek 2004] NewsScan, p. 20, *InformationWeek*, January 26, 2004.
- [RAI 2004] Saritha Rai. "Indians Fearing Repercussions of U.S. Technology Outsourcing", *The New York Times*, February 9, 2004.

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