

Massachusetts Institute of Technology Engineering Systems Division

Working Paper Series

ESD-WP-2006-16

GLOBAL OUTSOURCING OF PROFESSIONAL SERVICES

Satwik Seshasai¹ and Amar Gupta²

¹Massachusetts Institute of Technology and IBM satwik@mit.edu

²Massachusetts Institute of Technology and University of Arizona agupta@mit.edu

August 2006

Global Outsourcing of Professional Services

Satwik Seshasai (MIT and IBM) Amar Gupta (MIT and University of Arizona)

Email: satwik@mit.edu and agupta@mit.edu

As a growing number of firms outsource more of their professional services across geographic and temporal boundaries, one is faced with a corresponding need to examine the long-term ramifications on business and society. Some persons are convinced that cost considerations should reign as the predominant decision-making factor; others argue that outsourcing means permanent job loss; and still others believe outsourcing makes US goods and services more competitive in the global marketplace. We assert that if outsourcing options need to be analyzed in detail with critical objectivity in order to derive benefits for the concerned constituencies.

INTRODUCTION

With a growing labor market abroad and a challenging economic situation at home, large and small firms are making the push to outsource professional services to highly skilled personnel in less expensive labor markets abroad. At a global customer summit held in 2003, over 80 US firms indicated that outsourcing has saved them between 25 to 40% annually¹. In the services-sector, Forrester Research estimates that 2 percent of all American jobs will move offshore².

The current situation of reduction in costs versus loss of jobs, at least in the short-run, bears some similarity to the dilemma faced by the automotive industry in the early eighties when some of the parts began to be manufactured in lower cost countries such as Mexico. At the time, some observers perceived that too many U.S. jobs were being sent offshore, and that the impact to the U.S. economy would certainly be negative. However, a detailed analysis of that situation highlighted the danger of adopting a restrictive policy. This analysis revealed that increasing global competition required the United States automobile companies to outsource manufacturing to a certain degree, or to risk losing the world market to other countries that could produce cars cheaper and better. As Lester Thurow puts it: "There were only two long-term viable alternatives. Either half the car is produced in Detroit and the other half in Mexico; or the whole car is

produced in Japan. By attempting to use legislative measures to tilt the balance in favor of Detroit over Mexico, one would in fact be tilting the balance in favor of Japan³." The subsequent events have validated this assertion and the efficacy of the hybrid model.

Professional services, especially IT services such as software development and technical support, are at a similar stage, with some constituencies of the society using cost and time considerations to encourage outsourcing while other segments of the society applying pressure to maintain jobs within the U.S.

POLITICAL PERSPECTIVE

In November 2003, Governor Joe Kernan of Indiana canceled a \$15.2 million contract with Tata America International Corp., a New York-based subsidiary of Tata Consultancy Services (TCS). The Tata entity had won the contract over competing bids from Accenture LLP and Deloitte Consulting LP; its own proposal was \$8.1 million to \$23.3 million less than those of its competitors.

The late Governor Frank O'Bannon had approved the contract before his death in September. Up to 65 contract employees were stipulated to work alongside 18 state workers. All work was to be done at the Indiana Government Center, but the selected vendor was free to bring in workers from anywhere and pay them as it deemed fit. No Indiana-based companies had submitted proposals. Governor Kernan stressed that his decision to cancel the contract did not reflect on the ability of TCS to complete the job or any other shortcomings.

Stuart Anderson of the National Foundation for American Policy and Cesar V. Conda, former domestic policy adviser for Vice President Cheney, highlight the fact that the impact of this reversal on Indiana taxpayers will be very significant⁴. In this case, the next lowest bidder was \$8.1 million more than the Indian firm. Since the contract involved about 65 employees, and TCS was obligated to retain the existing Indiana workers, choosing a U.S. firm would impact a maximum of about 50 jobs. Assuming the extreme scenario that all these 50 jobs would now go to residents of Indiana, this still implies that the taxpayers of Indiana will now bear a cost \$162,500 per new employee - a cost that most taxpayers would probably be unwilling to pay. Furthermore, as Anderson and Conda point out, by limiting the bidding to in-state contractors, policy-makers are ignoring the economic principle of comparative advantage, and increasing the cost of future contracts since there will be fewer competitors.

Contrast this with a parallel development in the city of Springfield, Massachusetts. Its mayor decided that all drugs for city employees would henceforth be bought in Canada where the prevailing prices are between one-fifth to one-half of the comparable prices in the US. This would save the city millions of dollars each year. This aspect acquires special importance under the current economic conditions when many state and local governments are facing major financial problems.

Maryland, New Jersey, and several other states have pending bills that would prevent the outsourcing of government IT jobs to abroad. Other pending bills would require call center employees to identify themselves by their real name and the location they are based in (thereby discouraging outsourcing of technical support and other types of customer support). Many of the pending bills seek to use the power of government contracts to curb outsourcing. In Michigan, one pending bill seeks to seize away state contracts from firms that hire foreign employees; this is being done to ensure that "scarce state dollars are invested at home" according to the representative who proposed the bill³.

Other bills proposed over the past few years at the federal and state levels would use the government's authority in granting H1-B and L1 visas to combat companies who replace American jobs with offshore workers⁴. These bills are under consideration even though a recent GAO report has stated that more study is required to determine the true effects of the H1-B visa program on the American workforce, and the impact cannot yet be fully understood⁵. Most of these pieces of legislation are in the nascent stages, and have do not take into account the full impact on the taxpayers.

ECONOMIC PERSPECTIVE

Of the approximately \$1.45-\$1.47 of value derived from every dollar spent offshore, U.S. firms receive \$1.12-\$1.14, while foreign firms receive only 33 cents of the value⁶. Further, if income taxes paid by H1-B visa holders, and software and service imports by India are considered, outsourcing provides an aggregate benefit to the U.S. economy of \$16.8 billion⁷. Another factor to be considered is that the average age of the U.S. working population is declining, and the US Census figures indicate that the U.S. will require an additional 15.6 million workers to maintain the current working population in 2015⁸.

The proposed pieces of legislation fail to consider the long-term impact on citizens, both shareholders and taxpayers. For example, keeping IT jobs in the United States will undoubtedly be more expensive, and these costs ultimately will be transferred to citizens, either in the form of increased

taxes or reduced corporate dividends. With most U.S. states struggling with their budgets, fiscal considerations dictate that states adopt a balanced view to the situation. This mandates that they also consider the positive benefits of outsourcing.

From a labor perspective, most professional service workers are not unionized, though several observers have cited this possibility as being a likely trend, especially in the software industry. Groups such as the IBM union and the Seattle union represent the rights of a subset of software workers and advocate leaving American jobs in America. If an increasing number of professional workers enroll in unions, the new labor unions may impact the larger political landscape and alter the existing balance between management and labor.

In order to mitigate the types of pressures described above, one needs to think of new hybrid work paradigms that yield the best cost performance ratios by having part of the work be performed in the US and another part abroad. The potential distribution of work across geographic and temporal boundaries requires careful delineation of the economic ramifications of alternative distribution models in order to elicit the optimal benefits from the outsourced model. While some lessons can be learned from the experiences of globalization in manufacturing industries, the inherent distributed nature of the new paradigm presents new challenges. The costs for collaboration, as well as for replicated hardware and software, can be significant. Further, one must consider the investment in effective hiring processes, and in travel between onshore and offshore locations¹¹ – both of these factors impose financial overheads whose benefits can be hard to quantify.

Another major change is the widening of the competitive landscape. The lowering of costs in the software industry is making it possible for smaller firms to compete much more readily with larger firms, because the smaller firms can now access a bigger labor pool much more easily¹¹. With many professional services, the start-up costs are lower, and do not involve the significant capital investments that characterized the typical manufacturing scenario. These facts allow smaller companies to enter new markets and to maintain a small core of designers onshore that is complemented by a larger pool of offshore professional service workers. Using this hybrid model, they are able to compete more vigorously in the global market.

These proposed legislative actions are gaining attention and are fueled by the coming elections and the desire to capture the attention of the unemployed persons. While these proposed laws might offer some shortterm benefits to some persons, they fail to consider the long-term impact on the broader population or present the full picture to the electorate. For example, if one asks the voters to choose between retaining 1000 jobs in a particular state or letting them go abroad, virtually all voters would opt for the former option. What happens if one asks a more relevant question: "Do you prefer that 1000 jobs stay in the state or do you prefer a tax reduction of \$150 per year?; the latter benefit would occur if these jobs are permitted to go outside the state." In this case, many voters may opt for the reduction in their taxes, even if the two numbers were different from these hypothetical numbers for their respective states.

TECHNOLOGICAL PERSPECTIVE

A survey of over 50 software executives participating in off-shoring concluded that "off-shoring will live or die based on the ability of everyone involved to communicate with each other." Richer collaboration technologies need to become available in order to enable simultaneous use of video, audio and other messaging capabilities to link geographically and temporally separated personnel. The outsourcing of professional services requires firms to transfer knowledge via formal and informal channels within their organizations, as well as to establish and preserve knowledge repositories both for offshore teams to come up to speed on new tasks and for onshore teams to learn what is being done offshore. Such efforts require deep understanding of evolving technology and business needs.

A Forbes report identifies the key factors that contribute to a particular country's success in a particular market: infrastructure, culture, language, education, and many others¹². Technology can be used to mitigate many of potential deficiencies among these factors, and to bridge cultural gaps between employees from different nations. Based on these factors, both the Forbes report, as well as a Merrill Lynch report, concludes that India is the most preferred destination for outsourcing¹⁰. The key is to educate the concerned individuals both on the opportunities as well as on the process, and to use technology to develop an understanding of what is best done in the US and what is best done offshore. This process may lead to the conclusion that a revised onshore process is a prerequisite to a successful offshore process. For example, Campbell suggests that requirements definition is essential for quality outsourcing projects because the communication process is especially tough¹¹.

The delineation of what components of jobs should be performed in developed versus developing environments requires an intimate appreciation of the cultural and social issues such as language and education; this also involves understanding the technical requirements of each type of job. Certain jobs that are communications intensive, or have significant hardware or infrastructure requirements, may be more suited for one location versus another. As countries begin to appreciate this aspect, they may make critical investments in nurturing new technologies to support emerging market needs. For the software industry, functions such as QA/Regression and bug testing are being performed by 79% of the firms, while technology evaluation and telemarketing are being conducted by only 13% of the firms interviewed¹¹. This suggests that certain functions have been easier to segment for outsourced contractors, while others require a stronger grasp of the culture, language and knowledge of the market. Plambeck and Taylor's model of original equipment manufacturers (OEMs) pooling capacity with other OEMs as opposed to using contract manufacturers (CMs), in an effort to invest in innovation¹², could be used to demonstrate the importance of integrating the various phases of the design and development process in industries such as software.

STRATEGIC PERSPECTIVE

In testimony before the U.S. House of Representatives Committee on Small Business, Assistant Secretary for Technology Policy Bruce Mehlman has cited the United States strategy of emphasizing education, infrastructure, innovation, and existing benefits such as intellectual property protection¹³. While this strategy may be necessary for the United States to remain competitive, it must also take into account the fact that outsourcing may change the way firms perceive their interests. For example, the Sand Hill group report reveals that software executives attach relatively low importance to intellectual property protection while making decisions related to outsourcing¹¹.

The following table summarizes the benefits to companies of onshore and offshore engagements, as reported by the U.S. Department of Commerce Office of Technology Policy after convening business, university and government leaders¹⁶:

	Onshore Benefits for	Offshore Benefits for
	Firms	Firms
People	Talent pool is	Untapped talent pool
	unmatched	
Business Climate	Entrepreneurial,	Less burdensome
	market-based, easy	taxation, regulation,
	access to capital	litigation
Infrastructure	Telecom, energy,	New global clusters
	transport	created
Market Access	Innovation in largest	Untapped markets
	market	
Intellectual Property	Commitment to patents	
Government	Political stability	
Quality of Life	Freedom, health care,	
	security, environment	
Cost		Talent, facilities cost
		less
Proximity to		Plants are already
manufacturing		offshore

In understanding the strategic direction to be taken in terms of educating and re-educating the professional services workforce of the United States to enable them to better compete or co-exist with offshore professional service labor, it is important to understand the requirements of the job market. The report of the U.S. Department of Commerce entitled "Education and Training for the Information Technology Workforce" states that IT employers are looking for a specific blend of technical and business skills, and that they prioritize a minimal amount of training 14. This notion of flexible training that will allow workers to succeed in a changing marketplace for professional services is useful in determining the strategic direction for both onshore and offshore firms.

Another related strategic issue for U.S. firms investing in offshore outsourcing is the amount of diversification within their offshore engagements. One must also incorporate the risk of unexpectedly severing relations with foreign professionals who possess significant amounts of the knowledge on products and business practices of the concerned firm.

ORGANIZATIONAL PERSPECTIVE

In outsourcing of professional services, the set of relevant stakeholders involves include parties from both developed and developing nations. Now, companies in developing nations themselves are beginning to outsource to other markets to spread their labor costs¹¹.

The table below summarizes the key stakeholders:

Outsourcing Nations	Host Nations	
Professional service workers losing	Professional service workers being	
jobs	hired	
Firms hiring foreign labor	Firms providing outsourcing service	
Legislators responsible for economy	Policy makers responsible for	
Regulators	economy	
Government procurement	Citizens not being hired for	
Customers of professional services	professional services	

The relationships between these stakeholders is complex. Professional service workers who are losing their jobs to outsourcing and legislators who are faced with the impacts on labor and economy have to deal with the short-term impact. On one side, we have the workers and the need to retain professional service jobs remain within the United States; on the other, we have significant cost savings accruing to the firms who are hiring the foreign labor. This issue is complex because long-term solutions such as better education, better infrastructure, and better intellectual property protection, as suggested by Mehlman, are irrelevant in the short-term in terms of their ability to resolve the issues faced by these stakeholders.

Regulators in pertinent government agencies have to address emerging issues related to greater knowledge and infrastructure investment in foreign services. One of the obvious implications is the security aspect related to sharing encryption and other protected technologies with organizations in foreign nations. Another issue is visa regulations applicable to foreign workers who may come to the United States, take the knowledge they have gained to their original nations, and then provide much less expensive labor.

Another emerging issue relates to the digital divide created by enclaves of digitally enabled citizens benefiting from the outsourced opportunities living in close proximity to much poorer fellow citizens. The disparity in living standards creates potential political, social and organizational risks. This is a matter of concern for governments of developing nations hosting the outsourced contracts; it is also a matter of concern for governments of nations such as the U.S. that are witnessing

increasing invested in regions over which they have little control. Based on the latter concern, it may be in the interest of the U.S. government and industry to invest in the educational and economic improvement of developing nations. But this is a tough politically sustainable strategy since the apparent goal of such investment would be to provide more opportunities for foreign workers to acquire U.S. jobs.

CONCLUSION

Business executives are increasingly convinced that outsourcing of professional services can provide their companies with the major cost benefits by allowing goods and services to be produced at the most economic prices without the traditional barriers of national boundaries and corporate boundaries. On the other side, trade unions and unemployed individuals blame many of the economic woes to outsourcing. There are other stakeholders in this issue, too.

The issue of outsourcing of professional services across geographic and temporal boundaries requires detailed analysis of complex short and long-term issues, both on the national and international level. Firms will continue to move forward with plans to outsource, with the benefits accruing primarily to their shareholders. Workers will be retrained and will acquire new jobs that are more suitable for their background and location, both in developed and developing countries. One now has the opportunity to move towards the "24-hour global knowledge factory" where outsourcing means active engagement on knowledge intensive tasks for 24 hours a day, with opportunities for all involved. This future can be realized with careful consideration of all stakeholders mentioned herein, and with thorough analysis of the strategic, technical, economic and organizational issues discussed in this paper. If firms, governments, and individual workers are able to frame an approach in the areas mentioned above, outsourcing can be a "win-win" situation for all, and the globalized world of 24-hour knowledge factories can become a reality.

How do 24-hour Knowledge Factories fit into this political landscape? The opportunity for concurrent engagement on the same tasks, as opposed to entire functions being outsourced to foreign nations, may provide an opportunity for persons in U.S. and abroad to work together in a symbiotic manner. If the challenges described above can be met, outsourcing knowledge jobs to less-expensive labor markets can serve as an opportunity for U.S. professional service employees to improve their efficiency and to produce even more.

Four years ago, one of the authors of this paper advised Polaroid Corporation to perform more of its development tasks at its center in Gurgaon. There was resentment against this idea. Since then, Polaroid has gone through a painful Chapter 11 process and more than three quarters of its employees have either resigned or been laid-off. All parts of the company have been downsized. The only exception is its development center in Asia; the latter is now considered vital to the future of the company. Would it not be better for organizations, especially government agencies, to comprehend this potential without going though the intermediate stage of pain and suffering?

n

REFERENCES

¹ "Outsourcing saves up to 40% annually, feel IT firms." *Business Standard*, May 14, 2003.

² Skawinski, Kamil Z. "What is to become of the American IT worker?" *California Computer News*, http://www.cnmag.com, September 2003.

³ Thurow, Lester C. Interview, fall 2003.

⁴ Anderson, Stuart and Cesar V. Conda. "The cost of canceling a state contract." *Indianapolis Star*, November 30, 2003.

³ Arora, Vasantha. "Proposed Michigan bill to ban outsourcing contracts." *Hindustan Times*, August 12, 2003.

⁴ Nanda, Tanmaya K. "Bills galore to check outsourcing." *India Abroad*. September 12, 2003.

⁵ "Better Tracking Needed to Help Determine H1-B Program's Effects on U.S. Workforce." U.S. General Accounting Office, 2003.

⁶ "Offshoring: Is it a Win-Win Game?" McKinsey Global Institute, San Francisco, August 2003.

⁷ Endleman, Gary. "Fall Guy: U.S. Immigration and the Myth of Offshoring." National Association of Software and Service Companies (NASSCOM) Media Room, http://www.nasscom.org, September 2003.

⁸ "US may be forced to get across age bar, outsource jobs." *Economic Times*, September 17, 2003.

⁹ "The Roadmap to Offshore Success". The Sand Hill Group, 2003.

¹² Nanda, Tanmaya K. "India top outsourcing destination for US firms." *India Abroad*. September 12, 2003.

¹⁰ Subramanian, Anusha. "Outsourcing consultants have India bias: Merrill Lynch report." *Business Standard*, November 28, 2002.

¹¹ Campbell, Byran. "Real World Offshore Development Practices." Project Management Boulevard Expert Column, Robbins-Gioia.

¹² Plambeck, Erica L. and Terry A. Taylor. "Sell the Plant? The Impact of Contract Manufacturing on Innovation, Capacity and Profitability." Stanford Graduate School of Business Research Paper Series, No. 1750, September 2001.

¹³ Mehlman, Bruce C. *Testimony before the U.S. House of Representatives Committee on Small Business*. United States Department of Commerce, June 18, 2003.

¹⁴ Meares, Carol A. and John F. Sargent. "Education and Training for the Information Technology Workforce." Report to Congress from the Secretary of Commerce, June 2003.