Offshore Outsourcing of Software Testing:

An Evaluation of Cost

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An Evaluation of Offshore Outsourcing of Software Testing

RTTS has realized that many of its clients, most of whom are Fortune 500 firms, are turning to offshore outsourcing of development and testing projects as a way of reducing cost of IT projects. The concern is what, if any, real savings reside in outsourcing of this work and how effective is it?

RTTS has been polling some of its clients to determine an answer to these questions. But before we get to their responses, let's first look at the perceived costs and benefits of this outsourcing model.

The majority of outsourcing is being performed in India, although other countries, such as South Korea, the Baltics, Hungary, the Czech Republic, Malaysia, Argentina, Brazil, Chile, South Africa, Poland, China, Mexico and Russia are emerging as attractive countries for outsourcing[1].

Sapient, a large, publicly-traded professional services firm, was recently profiled in *Forbes Magazine*[2]. It was highlighted that Sapient was outsourcing programming deals to India to save costs. *Table 1.1* appeared in that Forbes issue. The article highlighted the tremendous cost savings as the reason for the switch and then outlined problems that were encountered during the way. Some of the issues were: finding qualified candidates, cultural issues, slowness in adapting to Sapient's collaborative management style, reluctance to disagree with a boss, and defensiveness or fear for their jobs if critiqued. Sapient believed that these issues were worth their costs based upon the hourly wage discrepancy displayed in *Table 1.1* which would lead to a large savings.

The Gartner Group recently performed a study of the myths of offshore IT service offerings[3]. Among their findings were:

- Many of the firms tout certifications, such as the Software Engineering Institute's CMMI certification. But advancing up the CMMI ladder does not assure complicity with service level agreements (SLA), only an awareness of the level of maturity of their internal processes.

Tech workers in India typically make one-fourth the salary of their counterparts in Sapient's hometown, Boston, including benefits, bonuses and perks. Sapient didn't disclose its salaries.	
Salaries ($thousands)	
BOSTON	**INDIA**
PROGRAMMER	
$67	$17
Three years' experience writing code	
PROGRAM ANALYST	
100	22
Seven years' experience writing and developing code	
WEB DESIGNER	
81	20
Five years' experience	
ARCHITECT	
160	38
Twenty years' experience designing software systems	
TECHNOLOGY RECRUITER	
77	18
Five years' experience	
BUSINESS CONSULTANT	
116	26
Ten years' experience	

Table 1.1 Source: AON Consulting -as seen in Forbes

- Cost savings may not be what they seem. Some of the outsourcing firms are quoting savings of 70-80 %. However, there are multiple hidden costs. Some may be the additional time spent selecting a vendor, overseas travel as part of either the selection or inspection process, increased due diligence on issues from security for employees and data, more stringent documentation requirements, and additional internal resources to manage risks and perform project management.

- Additional infrastructure requirements to handle data storage and access, security of data and bandwidth requirements to communicate efficiently.

Gartner concludes that savings may be more accurately determined to be closer to 25%.

RTTS feels that there may be benefits, such as the estimated 25% savings that are being quoted by experts like Gartner and Forrester Research[4]. If managed correctly, the use of offshore outsourcing in development may make sense. But according to published research, this benefit comes only for large projects of 40-50 people or more for an extended time frame (such as 1-2 year projects).

This was cited in an article on offshore outsourcing by InformationWeek[5] that *"…the amount of coordination involved in offshore outsourcing leads some to suggest that small outsourcing projects should be avoided. It can take months to lay a solid foundation between partners, so fast-turnaround jobs may not succeed, particularly in a new relationship."* Smaller projects may not feel this benefit at all. Most testing projects would fit into the definition of smaller projects.

Anecdotal Evidence
RTTS spoke with a few of our clients to determine their experience with outsourcing offshore, particularly in India. Below are their comments:

Premier NY Brokerage firm
RTTS currently works on a project at this premier global brokerage firm who outsources automated testing to "experts" in India. The scripts that get sent back are typically so rudimentary that our engineer must spend much time correcting and rewriting them, costing much more than anticipated. The scripts are approximately 80% inefficient. The test manager has 5 testers in India and is getting substantially less productivity than one RTTS resource. He has no budget for local resources and has been mandated to use these resources or lose the funding.

Global conglomerate
Our client at this global conglomerate has experienced much of the same issues. He is mandated to use resources in India. After providing a list of requirements for the resource, he had to wait almost 1 year for 2 qualified candidates. He has cited a communications issue with understanding what is being said over the telephone. He also cited that they will need to train these people for 8 weeks to ramp them up for the project.

Insurance corporation
At a New York City technology conference, this insurance corporation's speaker cautioned about offshore development and testing. The firm's representative said that they have been using a combination of offshore development (in India) and local development/testing. The cost savings of offshore development initially appeared to have been substantial, but immediately, if an application changes, the requirements change, and so do the costs, almost at an exponential rate. The speaker went so far as to suggest that the offshore companies know this and depend on it. If not careful, the anticipated savings can quickly evaporate. It was also stated that even though a company has developed a particular approach and methodology, it is hard to assure that the culture of the offshore organization will be in synch with that of the company outsourcing the work.

Multimedia corporation
While consulting at this firm, we noticed that testers brought in from India were "hit and miss" with programming skills necessary to perform test automation. We also observed that some had training in the tools while others did not, even though this was a requirement. This project was staffed with one of the most reputable of all the offshore outsourcing firms.

Table 2.1 Source: RTTS

Hidden Cost Item	Comment	Cost
Vendor selection	Much more time in performing due diligence in selection of firm and people.	unknown
Travel - inspection	One round trip as quoted on Yahoo travel from NY to Bombay is $1,100.	$1,100 per round trip
Document verification	Verifying functional specifications, requirements, test cases, etc.	unknown
Project/risk manager	Will require much more hands-on management techniques, including conference calls.	unknown
Formal training	Either formally or on-the-job. RTTS spends 300 hours in boot camp at a cost of approx. $5,000 per employee	$5,000
Communication	Increased expense for phones, upgraded data lines, teleconferences, etc.	unknown
Time difference	9:00am - 5:00pm translates to 6:30pm to 2:30am in New Delhi, causing a staff coordination issue.	unknown
Variable quality	The quality of testing and test automation has been observed to range from inconsistent to poor.	unknown
Total		**unknown**

Financial Services firm
A financial services firm that RTTS performed years of work for was evaluating offshoring the development of internal software. They determined that at their internal rate of $75 for resources, it would cost them $4.5 million to develop the software. They received a bid of under $2.0 million from an Indian outsourcer, whose average rates were $20-$25 per hour. Elated at such a cost reduction, they signed up. The end result was a project that ran to over $13 million in expenses, was years late and never was completed. The project was cancelled.

Additional Issues cited
RTTS' research has identified the following list of additional issues that have been identified by firms that have used offshore outsourcing and need to be weighed when considering cost.

- *Infrastructure issues* – Many offshore countries lack the network bandwidth for fast communication and many experience intermittent electrical outages.

- *Security issue* – Not all foreign countries have the high-level concern or the laws, such as those for privacy or intellectual property, to protect you.

- *Skill set/quality issue* – We have encountered poor or unacceptable quality of work in test automation, regardless of the CMM level touted.

- *Objectivity issue* – Is your offshore partner performing your development and your testing? Will they keep your best interests at heart (and provide adherence to functional, performance, reliability and usability testing standards) when it conflicts with meeting their deliverable date?

- *Geopolitical issues* – While recent events have proven that the US is not immune to terrorism, Asia and other underdeveloped areas experience instability caused by unstable government, political unrest, terrorism, etc.

- *Cultural issues* – Cultures are different. It is possible to insult offshore partners inadvertently or simply to miscommunicate. Business conduct, greetings, forms of address, gestures, value systems and punctuality vary widely around the globe.

- *Language issue* – Unquestionably many offshore resources provide communication challenges, especially over a forum that does not allow you the ability to view facial expressions. And email can be worse.

- *Time zone issue* – Many of the Asian firms have as much as a 10-hour time difference. The outsourcing firms try to spin this as a "good thing" for you. Is it good to not be able to have your team discuss issues with their team as they arise?

- *Difficult to visit their site* – Because of the cost and length of travel (as much as 20 hours each way), visiting your partners with any frequency becomes much more unrealistic. Also, foreign ground transportation is not like that in the US.

- *Difficult to fly resources to you* – There are possible Visa issues and heavy expenses with bringing your partners to where you do business.

- *Increasing price trend* – Many offshore providers that have been successful are increasing their prices due to fact that competition for local human resources is pushing up the cost of labor.

- *Labor Backlash* - There is a groundswell of backlash against the current trend toward exporting jobs outside the US. This backlash may cause negative publicity for your firm.

Worker Productivity

Economists Jack Triplett and Barry Bosworth, both of the Brookings Institution, looked at recent trends in service-sector productivity. They have concluded that there has been a big jump in US service-sector productivity in recent years. They surmise that the rate of increase in service productivity is now equal to that in manufacturing. This conclusion is confirmed by a new Federal Reserve Bank of Chicago study, which found that services are now reaping the benefit of past investments in IT that will continue for years to come. Rising productivity at home offsets most, if not all, the advantages India can offer in the realm of cost savings.[6]

How RTTS can work with firms already deploying offshore development or testing

RTTS firmly believes that there may be value in offshore development if the above criteria are met, namely that the project is of substantial size and length and very tight processes and quality controls are put into place. RTTS feels strongly, however, that testing should remain apart from development and through an independent party. The main reason for this is that by keeping the testing removed from the development, there will be an objective assurance of the quality of the code and applications being developed offshore. RTTS can provide the checkpoint or tollgate to verify that the application(s) function according to specifications and can scale, validating actual behavior against service-level agreements (SLAs).

If firms are already deploying offshore automated testing, we recommend that you verify the thoroughness of the automation scripts and the breadth of coverage. We can determine the skill level of the testers, based upon our strict criteria and framework for a modularized approach to test automation. Based upon previous experience, many of the offshore companies employ "test automation experts" who do not know how to use the tools well and do not employ a standard methodology. This inhibits a systematic approach to testing and causes tremendous rewriting of scripts, thus driving up the cost of the resource.

Summary

Cost

The major issue with cost is that it is not a straight comparison of hourly outsource rates of US resources versus hourly outsource rates in India or elsewhere. There are hidden costs involved that increase the price (see Table 2.1) along with additional issues that need to be calculated into the cost savings. Some of the major hidden costs are: slower development time due to cultural issues, inability to train staff effectively, limitations on site visits, more due diligence required, tighter security restrictions, more difficulties in quality control, and infrastructure issues.

Benefits

Direct costs may be reduced by as much as 25%, but only for long-term projects with 40 or more resources and a minimum of 1-2 year projects.

Risk

- The quality of work and worker productivity from offshore outsourcing will probably not match that of US technology workers.

- Asia is not as diligent as the US in protecting intellectual property. There is little to prevent someone from creating a new application utilizing the code written for your application.

- Sensitive client data may also be at risk due to security and legal issues.

Conclusion

There is much more to offshore outsourcing than meets the eye – and there is no clear-cut case that in the long run it is cheaper than performing the tasks domestically. In fact, in some cases it has become much more expensive in the long run. It is difficult enough to manage a development team in the same building, even more so to manage a team that is 7,000+ miles away in a different time zone, different culture, different work ethic, different language. QA and testing are also the last layer of protection before release. It is crucial that it is performed systematically and performed separate from development.

Direct References

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Other Research Material

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About the author

Bill Hayduk, founder, president and director of professional services, has an excellent reputation in the technology field and is particularly noted for his methodology and automation expertise. Over the last 20 years, Bill has successfully implemented large-scale projects at many Fortune 500 firms. He has worked in various sectors including global banks, brokerage firms, multimedia conglomerates, pharmaceutical, and insurance and reinsurance companies.

Bill holds a Masters degree in Computer Information Systems from the Zicklin School of Business (Baruch College) and a Bachelors degree in Economics from Villanova University. He has been a selected speaker at industry-specific trade conferences, as well as a source of information for corporations and has been referenced in many industry trade publications.

About RTTS

RTTS is the premier professional services firm that specializes in providing software quality for critical business applications. Serving Fortune 500 and mid-sized companies nationwide since 1996, RTTS has offices in New York, Atlanta, Philadelphia and Phoenix. RTTS draws on its software quality methodology, expert engineers and skills in the marketing-leading toolsets to provide the foremost end-to-end solution that ensures application functionality, reliability, scalability and security. To learn more about RTTS, visit www.rtts.com.