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### Offshore Outsourcing: Is This Change in Corporate American Business as Smooth as What You Have Read?

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**Offshore Outsourcing:  
Is This Change in Corporate American Business  
as Smooth as What You Have Read?**

**By**

**Mary Felice Tochelli**

**Thesis submitted in partial fulfillment of the requirements for the  
degree of Master of Science in Information Technology**

**Rochester Institute of Technology**

**B. Thomas Golisano College  
of  
Computing and Information Sciences**

**March 2005**

**Rochester Institute of Technology**

**B. Thomas Golisano College  
of  
Computing and Information Sciences**

**Master of Science in Information Technology**

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## **Acknowledgements**

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Mary Ellen and August Tochelli  
for their on-going love and support  
and  
their belief that you can do anything if you try  
THANK YOU

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## **Hypothesis**

The hypothesis of this thesis is: *offshore outsourcing: can it be proven to be a successful endeavor?*

## **Abstract**

The software industry is one of the fastest growing industries in today's business world. The focus seems to be on the software industry now because there are so many other industries such as online retailers that are reliant on software and the information technology world.

The purpose of this thesis is to extend the knowledge on current practices, methods and processes when application development is outsourced to offshore vendors.

This thesis will also examine key steps to avoid when looking to outsource an application development project. Numerous risks will be discussed as well as the processes to be implemented and followed to abate these risks. Offshore development projects tend to have more risk, than do onshore projects and, therefore, need to be more closely monitored to achieve the organization's goal.

# Offshore Outsourcing

## 1. Background

### 1.1 What is Outsourcing?

Outsourcing is when an organization or company transfers the ownership and control of a business process to an outside vendor. By purchasing the offshore service while maintaining ownership, resources are available to focus on other areas of economic endeavors. Exporting of the IT related work from the US to other technologically advanced countries is the most common form of offshore outsourcing. The software industry is one of the fastest growing industries today that outsources IT related work.

The focus is on the software industry now since all other industries are reliant on software and the information technology world. Three widely known key attracters to outsourcing are: a highly skilled technical resource pool, lower labor rates and ability to provide tax savings to the US businesses. Traditional IT outsourcing is done for help desk applications, and both development and maintenance infrastructures.

### 1.2 Why Consider Outsourcing?

More and more businesses are looking at outsourcing to meet their needs. The notion of offshore outsourcing is appealing as a way to:

- Reduce expenses
- Increase revenue



## Offshore Outsourcing:

- Solve resource issues
- Shrink or offload legacy systems
- Acquire new technologies or technical expertise
- Access talented resources (with English competency for ease of communication)
- Attain tax incentives
- Accelerate the time to market
- Shared risks
- Improve Company focus

Flexibility exists by having the outsourcee do the job and the company (outsourcer) can reduce the cost and time associated with finding the right resources or re-training in-house resources. This allows the US companies to focus on other business matters within their organization or innovative ideas for future projects.

Some respondents to an Outsourcing survey believed that the outsourcing suppliers would be fulfilling an immediate need rather than a long-term strategy (Epner, 2000). While this perception has changed quickly over the past five years, many people may still have that misconception. Epner thought that the outsourcing project organization looks to the subcontractor to bring the expertise in detailed project management and risk mitigation.

### **1.3 Outsourcing in Today's Environment**

Forrester Research statistics report that 27,121 computer and mathematical jobs moved off US shore in 2000 and their prediction was that 108,991 of these types of jobs would leave the US by 2005, 276,954 by 2010 and 472,632 by 2015 (McLaughlin, 2003, pp.114-117). IDC statistics reported in October 2004 the top 3 functions outsourced were: customer application development (\$2.8 billion), systems integration (\$2.4 billion) and application management (\$1.5 billion) (Staff, Computerworld, 2004). This report based on 2003 data also indicated that India held 72.4% of the market share of worldwide outsourcing.

A United States Department of State 2003 report, based upon March 2000 data from the Bureau of South Asian Affairs, indicated that India's work force was 416 million and not one of those jobs were IT (State.gov, 2003). This shows that the movement to offshore outsourcing was not evident prior to 2000. Basing the report on 2000 data did not capture the recent growth of offshore outsourcing

The US Government Office of Management and Budget simplified the process for private companies to bid for public sector jobs in May 2003. This was the result of the US Government determination that the private sector was able to streamline processes better than them. There were 850,000 federal employees providing services and with this new policy, it allowed 425,000 jobs to be bid from the private sector (United States Department of State, 2003).

## Offshore Outsourcing:

Incentives to do work outside the US have been a concern for years. President Kennedy in 1962 signed off on the first Trade Readjustment Allowance (TRA) to provide government assistance (job training) to manufacturing workers who lost their jobs due to national trade policies. TRA was further updated in 1974. The Program Summary The Trade Act of 1974 provides for classroom training, on-the-job training, job search allowance, relocation allowance, and Trade Readjustment Allowances (TRA) for individuals certified by the Federal Government as having lost their jobs due to the more competitive nature of goods produced outside the United States. Trade Adjustment Assistance (TAA) benefits exist if there are three or more eligible employees. This loophole involving only manufacturing jobs is still in existence today. In many cases it does not provide assistance to individuals who lose their job due to outsourcing (Hall, 2004).

The unemployment rate is a hot issue with politicians today. Politicians have a difficult time defending policy situations when government jobs are outsourced (Welsh, 2004). They are caught between trying to do a good job for their constituents by maintaining the federal/state or local budgets and trying to save money while not losing United States jobs (Emery, 2004). Senator Chris Dodd's legislation would ban offshore outsourcing unless the work was previously done overseas or if that is the only place that it is available. Education and retraining due to job losses related to offshore outsourcing needs to be addressed by both the government and private industry (Emery, 2004).

## Offshore Outsourcing:

Anthony Pellicano, Director for Resource Management, US Army Communications-Electronics Command (CECOM) at Fort Monmouth, NJ stated though work is outsourced, some Federal government contracts prohibit work being sent overseas at the direction of the Federal customer. There are situations where information is deemed classified and even with signed non-disclosure agreements Federal work is not allowed to leave the United States (Pellicano, personal communication, July 16, 2004).

Outsourcing has led to the displacement of workers and resulted in organizational culture changes that are not always embraced by the employees. These are some of the issues raised by the offshore outsourcing arrangements.

It is important to find the right partner for the project. The Indian government is working to improve the infrastructure and build fiber optic networks in cities where software activity is occurring. Outsourcing offshore in India has advantages due to the English speaking resources and low salaries.

The focus of this paper will be on offshore outsourcing to India. India has three major outsourcing houses: Wipro in Bangalore, Tata Consultancy Services in Bombay, Infosys Technologies also in Bangalore. All provide both onshore and offshore services.

## Offshore Outsourcing:

India has become a preferred site for outsourcing for a multitude of services including development, call centers, payroll, claims processing, medical transcription and medical image reading to name a few. Due to the time zone difference, it is almost like having employees working 24 hours a day (personal account). This works to the advantage for both the US companies and the Indian vendor because of response time and in many cases 24-7 support depending on the circumstances (Pattabiraman, personal communication, October 22, 2003). India is known for their skilled manpower, training centers, developed infrastructure, and tax incentives.

In an interview done by eweek, Vivek Paul, vice chairman of Wipro Ltd., was quoted stating that Wipro has 26,000 employees in 24 locations and the company is worth one billion dollars (Staff, eweek, 2004). Wipro has made an investment in process quality and was proactive in preparing for Sarbanes Oxley compliance. Vivek Paul believes their processes are structured and repeatable, thus giving software development more of a factory type environment (Staff eweek, 2004). There are many other nations coming forward with many highly qualified and skilled IT professionals. For example: Pakistan focuses on software quality and processes and they have better English skills than India (Overby, 2002).

## **1.4 Outsourcing Models**

Onshore outsourcing often called outsourcing, is when a company obtains services from an outside company but within the same country. For example, GM outsources to AC/Delco for parts.

Offshore models range from having the subcontractor onsite, offsite, offshore, or a combination of onsite/offshore, offsite/offshore.

### **1.4.1 Outsourcing model types**

The Onsite model is when the service provider is on the premises of the requesting company.

The Offsite model is when the provider is on the same soil as the company requesting the work. This model works for short-term projects and when there are minimal changes in the business process. An example: fulfillment of literature requests.

The Offshore model entails that all project-related activities are done at the offshore provider's location. The United States company will interact with the offshore group without any offshore providers onshore. This model is successful in providing high quality work done with low labor costs. An example: would be web page design.

## Offshore Outsourcing:

The Offshore-Offsite model is often used when there are well-defined requirements upfront, minimal changes in process or when the US customer does not have space for more people to work. The Offshore model is also used to utilize the time zone differences and reduce costs with high quality. The risks associated with this model are tied to communication gaps between the customer and vendor and improperly documented requirements. An example: offsite gathering/interviewing for customer requirements and offshore the development.

The Onsite/Offshore model is known to be the best model. This model provides the United States company the ability to communicate with the outsourcing company via the onsite outsourcing team. It provides 24x7 work cycles and low costs for resources. An example: Onsite customer acceptance with offshore testing.

More successful models are the combination of offshore/onsite and offshore/offsite. These approaches are the most cost effective in terms of time, communication and cost. These approaches also provide the skills sets to deliver on-time and high quality deliverables to work 24x7 (24 hours per day, 7 days per week) (Pellicano, personal communication July 16, 2004; Drescher, personal communication July 29, 2004; personal account).

## 2. Benefits

Of the 800+ executives in US and Europe surveyed by Accenture, 86% of the respondents stated outsourcing provided them with more control over their business results (Byrne, 2004).

During the first year, most IT organizations save between fifteen and twenty-five percent. By years two and three, the learning curve has gone up for both the customer and the vendor and the savings can be as high as a forty percent (Davison, 2004).

Forrester interviewed vice presidents and directors of IT with offshore subcontractors from 145 North American firms, with 20 in depth follow-up interviews. 88% felt they were receiving somewhat better or much better value, while 71% felt that they were receiving somewhat better or much better quality.

The most common benefits received from outsourcing is an increase in profits, scalable resource management, improve service levels, reduction in time to market, speed in data gathering, increased reliability of the product/quality, and the ability to focus resources on core competencies.

Other benefits include:

- Standardization and repeatable tasks increase the likelihood for error reduction along with cost savings. Many outsourcees have other very



## Offshore Outsourcing:

important/highly visible clients and have acquired more knowledge, experience and best practices than the US companies. The organization is looking for the equal or improved quality. The goal is to receive high quality deliverables with fewer errors, better features with a shorter turnaround time.

- Cost reduction – provides a predictable cost budget year over year based on the contract
- Improved Time to market/speed – faster deployment, minimal dependency on internal staff
- Expansion of staff roles into more management roles and cross training into new roles. Much of the US manufacturing jobs outsourced in the 1980s and 1990s resulted in re-training. Outsourcing has the same impact.
- Competitors using Offshore Staff – use to maintain competitiveness
- Flexibility of bringing in resources to work for short periods of time without the administrative paperwork
- The US Corporation no longer solely owns all of the risks. There are shared risks and it would be the outsourcee's responsibility to deliver the product.
- Resource availability is no longer an issue since there is the sub-contractor/outsourced resource pool.

### **3. Risks**

#### **3.1 Risk to the Outsourcer**

While outsourcing is becoming normal business practice for all project sizes disadvantages include: cultural differences, employee morale, risk of intellectual capital, risk that process non-conformance may not be followed and unplanned costs.

Due to poor process controls with the offshore vendors, a medical transcription service in India, doing work for the University of California at San Francisco Medical Center encountered a serious issue. An employee threatened to upload onto the Internet confidential patient information unless she was paid for medical transcription she believed she was owed. The disputed transcription amount was three cents per line, which was subcontracted four times before reaching the Indian company. The original outsourcing price was eighteen cents per line. Odds are the University of California at San Francisco had no idea that their work was subcontracted so many times. They may not have even been aware their patient information left the United States (Rasmussen & Moore, 2004).

Consumer confidence can be marred when security incidents occur. People hesitate to do business with companies that send their data offshore fearing their personal information could be compromised.

The above example is an outsourcing risk. While outsourcing is becoming normal business practice for all project sizes, disadvantages include:

## Offshore Outsourcing:

- Contractor going out of business and the in-house staff not being able to pick up the pieces.
- Cost reduction expectations are not met
- Data protection and security
- Not following CMM processes or customer's existing internal processes
- Culture/Language barriers and differences
- Intellectual property: potential data leaks
- Communication barriers due to distance.
- Loss of Business Knowledge
- Scope Creep
- Government Oversight and Regulation
- Location/Time Zone Differences
- Turnover of Key Personnel
- Knowledge Transfer
- Staff Turnover
- Perception
- Software Licenses
- Unexpected amount of time and effort required to maintain the outsourcing relationship
- Project Risks
- Geopolitical
- Project Management/Performance Metrics

## Offshore Outsourcing:

Some of these in detail are:

Communication barriers due to distance: Not everyone feels the time zone differences are a benefit. They feel that the time differences and the lack of the coordination between the two staffs for meetings along with the inability to pick up a phone to have an immediate answer negatively impacts communication (personal account). If there are code issues, not being able to resolve the problem in timely manner can create further issues. For example, if a customer in United States wants to complete a software build they are dependent on the offshore developers to have checked in the required code prior to them leaving at the end of their workday (personal account). If the code is not checked in it could impact the deliverable by an additional day, unless the offshore group has questions. If they have questions and it requires the United States customer or some other onshore person to respond to the questions, it could extend the process by additional time. According to Forrester certain projects should not be sent offshore because of the need to work synchronously for certain development and maintenance type projects (McCarthy, Martorelli, Moore, Agosta & Ross, 2004).

Software Licenses and Multi-site Licenses: As previously stated, when Forrester interviewed vice presidents and IT directors with offshore subcontractors. Some had issues with multi-site licenses. They reported delays were incurred when software licenses were not valid in India. Software licenses may be invalid outside of the country where purchased. The required software licenses could

## Offshore Outsourcing:

result in a tremendous unplanned expense. For an example, North American licenses purchased Cognos Tools license are not valid offshore in India (personal account). Depending on the contract with the offshore company, the United States customer could easily be responsible for the software licenses of their on and offshore subcontractor (personal account). This unforeseen risk can be quite costly.

Staff Turnover: Elimination of current technical staff or the change in their roles when outsourcing occurs causes concerns when all the expertise leaves the US or the company. Some companies may want to consider retention bonuses to retain knowledgeable staff until the outsourcing venture proves successful (Muto, personal communication, December 20, 2004).

Cultural/Language Barriers: The cultural language difference can cause miscommunication and improper assumptions. If an employee from India were to say “Yes, Yes”, it does not confirm understanding. When they say “Yes Yes”, it means I heard you communicate, not “Yes, I agree to do the job”. There have been many issues documented related to cultural differences and language barriers. The cultural differences and language barriers can be a large enough risk to destroy a project. Communication is key.

Knowledge Transfer: There are also risks regarding knowledge transfer and the willingness of both parties to take part in the knowledge transfer. It is crucial to

## Offshore Outsourcing:

understand the customer requirements for what knowledge has to transfer. If the requirements are not clearly and completely understood, unnecessary changes will result.

Project risks: This includes the lack of project management and productivity.

Risks associated with the offshore outsourcee involve the successful transition of the work and the limited lack of on-site management. There may be a perceived or real loss of control over Information Management functions: increased expenses if the outsourcing relationship is not managed closely, dependency on the subcontractor for mission critical items. There may also be the inability to revert back to in-house development.

Project Management/Performance Metrics: The largest issue was project management and accurate performance metrics for the subcontractor. In interviews, two other issues that were found were that 31% of interviewees thought that there was some challenge with not having good processes for specifying the work and 37% believed that cultural differences existed between the two staffs (McCarthy, Martorelli, Moore, Agosta & Ross, 2004 pp. 9-10).

Data Protection and Security: There are also security risks that need to be identified, mitigated or controlled. As stated in the opening of this section, issues with data being misused and shared have been a problem. Medical transcription services, development, data analysis, manufacturer's supplier are just a few

## Offshore Outsourcing:

areas where offshore outsourcing of work is now being done (Rasmussen & Moore, 2004).

CMM Processes: There is a risk in configuration management for the project if the offshore team does not follow the standard configuration management procedures used by the United States team. Naming conventions agreed upon by the team should be used and if there are corporate standards, the offshore team should follow them. The offshore team also needs to follow their customer's processes (e.g. the check-in/checkout procedure for code, environment security, and documentation standards). Without all team members following the established process or determining if there is a risk prior to the project beginning, it will result in unexpected complications, delays and the potential of lost data, repository corruption and elongation of the project.

According to Watts Humphrey, half of the Capability Maturity Model Level 5 rated companies are located in India (Willoughby, 2003). Although the outsourcing company has CMM Level 5 certification that does not guarantee that the individuals assigned to the US project possess Level 5 work practices. A CMM certification is a snapshot in time and there is no guarantee that the organization has maintained their CMM level. The lack of knowledge can be a risk.

Geopolitical: From the geopolitical perspective another risk is the instability of a political environment that could discourage off shoring in India. A security

## Offshore Outsourcing:

concern is that although the offshore company has signed a non-disclosure agreement they may not maintain the confidentiality. The legal recourse may be unavailable or unsatisfactory if any recourse is even available. This is not just a risk with India but for any outsourcing arrangement. Other issues center around legal concerns, threats of war, terrorism, tax laws, changing import/export rules, work visas, international travel and acts of God.

Another risk due to outsourcing is when callers do not want to be connected with someone with a foreign accent. Some situations are worsened when frustrated callers escalated their offshore help desk problems to Hewlett Packard only to be routed back to India to lodge their concerns (Barbara G., personal communication, April 2, 2004). Their offshore group did not have a full understanding of the English language, which resulted in the call center's database becoming a disaster. Names were keyed in for the customer who called from a different phone number (e.g. home, work, cellular) about the same issue/product. Even though they could sort by the phone numbers, the names were so grossly distorted the HP staff could not always follow the communication thread to know that it was the same customer. Also, by not capturing and tracking serial numbers, this also prevented easy tracking of customer concerns for the help desk.



### 3.2 Mitigation of the Risks

Although there are many risks to outsourcing there are ways to mitigate them.

- Maintaining a contingency plan both to take the work back in-house and to expand the outsourced responsibilities is important (Martorelli, 2003).
- Simple, clear communication can mitigate the risk of poor communication and can also mitigate the risks caused by cultural and language differences. By stating the necessary information without slang language and obtuse meaning, this helps to mitigate the risk of misinterpretation.
- Including someone that knows both cultures when negotiating is crucial to ensuring that information received equals that information that was delivered by both parties.
- Working with the provider to obtain their best resources on the project will ensure that you have the technical capability you require.
- Change management metrics for the project are crucial to understand changes both for legitimate reasons and those for requirements that were not clearly communicated or understood. This will allow the company to make necessary changes.
- Include performance metrics in the contract to aid in meeting the objectives and goals for both parties (Washington, 1999).
- Metrics should be reviewed monthly for both performance and comparability measures. Cost measures should be separated by tasks whenever possible to clearly identify areas of opportunity and prices of tasks (Washington, 1999).

## **4. Transitioning to an Outsourcing Arrangement**

Transitional changes include determining all of the required work to be done upfront and during the transition to assure the team's success.

The organization's goal for negotiating the contract and the Service Level Agreement (SLA) must include details of requirements, processes and procedures, how and when deliverables should be received all while maintaining an eye on the internal goal to drive costs down and increase savings (Benton, personal communication, June 7, 2004).

Cost considerations should include personnel, telecommunications, software licenses, management oversight, infrastructure and travel. Travel considerations should include resource availability and their travel between shores.

Before outsourcing, an organization should prepare for the transitional challenges, cultural factors, human factors and customer knowledge.

### **4.1 What to do prior to transitioning**

Prior to outsourcing, an organization's management team needs to determine what functions will be outsourced, why they need to be outsourced, and if internal resources/employees are prepared to take on management of offshore employees (personal account). It is critical to read as much as possible about

## Offshore Outsourcing:

outsourcing so the organization is well prepared and versed on the vernacular used with outsourcing. Offshore outsourcing takes a lot of work to establish and maintain. Coordination and communications between the teams may require additional staff and time to achieve the desired goal. An organization should not outsource for the sole purpose of unloading undesirable work.

It is important to speak with other organizations and other companies that have already outsourced. Their experiences, best practices and lessons learned are invaluable resources. As with any new venture, the outsourcees often does not know what to be concerned about. People should not be afraid to ask questions (Benton, personal communication, June 7, 2004). Benton feels it is important to leverage global resources i.e. (resources available around the world both on and offshore) to maximize the relationship and get the desired results.

Mike Epner, a senior consultant at Cutter Consortium, determined that a team should possess certain skills to effectively outsource. Skills requires to be effective include: good project management, quality control plans, configuration management, quality control and an understanding of risk and their mitigation (Epner, 2000. p. 3). Of the businesses surveyed by Cutter in January 2000, 56.1% thought they had the skills in house to manage outsourced activities, 30.4% thought that they did not possess the necessary skill while 13.5% did not know if they had the appropriate skills.

## Offshore Outsourcing:

Some of the respondents believed that the outsourcing suppliers would be fulfilling an immediate need rather than a long-term strategy (Epner, 2000).

While this perception has changed over the past five years, many people may still have that misconception. This lack of project planning can cause the organization/team to not be prepared to handle the subcontractor's expectations and cause unexpected delays. Epner thought that the outsourcing project organization looks to the subcontractor to bring the expertise in detailed project management and risk mitigation.

It is important to have an overall outsourcing strategy in place for the organization (Duffy, 2004). There needs to be a detailed plan in place in order to be successful. The plan should cover the following:

- Soliciting bids
- Crafting a contract
- Outlining transition tasks
- Determining operational metrics
- Reallocating resources
- Creating an escalation process to resolve issues
- Developing a financial plan
- Maintaining employee morale during the transition

These items are discussed in detail below:

#### **4.1.1 Solicit bids**

The companies that are solicited for bids should first be confirmed as being suitable for the job. It is important that the organization find a provider (subcontractor) that has knowledge of the company/organization and has experience in similar projects. It is also important to only do business with a politically and financially stable country. If the country is not stable, there will not be any cost savings, and you could be adding a tremendous risk to the project. Work visas need to be easily obtained, and a determination needs to be made if there is uncertainty with people being able to travel between the countries for the project.

The team leaders must perform due diligence to ensure that both parties can do the job before signing the contract. It is important that the company talk to others who have outsourced offshore. Whenever possible, they should obtain references of subcontract team members. The team needs to have already determined what they want and not assume the subcontractor will be able to fill their needs. Needs should be clearly documented and communicated. Lack of understanding of business and business processes introduce defects into the solution. This risk is true for any project not just outsourced projects. The plan requires the team to know what to expect and what to ask for; these become the objectives of outsourcing. This can be accomplished easier if the right people are engaged early.

## Offshore Outsourcing:

Some questions to ask are:

- How easy is it to setup an operation?
- What are the labor laws?
- How easy is it to exit?

### **4.1.2 Crafting a contract**

One question to ask prior to signing a subcontractor agreement is how will the provider handle unforeseen changes? An agreement must include if additional fees would be charged (variable contract) or if the contract agreement is fixed and no added costs are incurred, even if the project may be delayed. Even though the outsourced team members are not United States company employees, their contributions significantly impact the corporate mission and goals. They need to be sufficiently involved to know how important their contribution is to the corporate/organization goal. The offshore outsourcing company has a vested interest in having the outsourcing venture prove successful.

Intellectual Property rights need to be enforced, as well as personal data security. There is much discussion about sending Social Security numbers, health history/records and dates of birth offshore. US citizens do not feel comfortable with the personal information being in the hands of unknown strangers in another land.

## Offshore Outsourcing:

It is important to validate and inspect the physical location offshore where the work will be performed. It is within a domestic (United States) company's right to validate that the work will be performed in a secure building and that there is a private network (Pellicano, personal communication, January 21, 2004).

### **4.1.3 Outlining transition tasks**

It is important to set a realistic schedule to determine the rough order of magnitude (ROM) of the project to be sure the critical path items are on target. The critical path includes: estimating and planning for process changes, gathering the data, negotiating a price for the project, identifying requirements for the proposed solution. Time needs to be factored in for pricing and contract preparation. This includes the buy-in by the functional process owners and the business partners of the outsourcess.

Security access must be given to the offshore team. US Companies need to be sure that they retain access control and grant the appropriate permissions. This is especially true with the Sarbanes Oxley law, which includes the segregation of duties. The ownership for Sarbanes Oxley belongs to the US company. It is important to monitor activities to be sure the US company is getting what they expect from the offshore provider.

There is a need for on-going pertinent communication and planning. With today's business style involving frivolous emails being sent, it is important to only

## Offshore Outsourcing:

send pertinent emails to be sure the communication is received and processed. Face-to-face meetings with an agenda and concluding with meeting notes and a list of agreements are essential to a common understanding between parties. Clearly, well-defined objectives are needed prior to outsourcing. Written objectives and processes with sign-off and buy-in are needed on both sides of the relationship to be successful. Standards should already be in place, but if they are not it is important to get buy-in/agreement from both sides. Training is required for some employees of the United States company in order to manage the sub-contractor effectively.

Some additional issues are the ease and speed of getting domestic import licenses if applicable and how easy is it to obtain the necessary work visas for any offshore workers coming onshore to work for an extended period of time.

### **4.1.4 Determining operational metrics**

A plan needs to be in place to validate that corporate data is secure and intellectual property is protected. Expect a decline in productivity the first year and the plan should include time for a learning curve. Other significant items to keep a watch on are hidden costs and educating the staff about cultural differences (Emery, 2004).

Process capability plans should include all the processes both on and offshore ensuring that standards are met and integration and touch point activities are without incidence (Willoughby, 2003).



#### **4.1.5 Reallocating resources**

The consideration here is to understand if the United States is allowed to export the technology planned for operations in that country.

It needs to be determined which functional areas must be involved from the initial contract development to the production and maintenance phase.

The roles/responsibilities of each functional area need to be determined and accountability needs to be established for each deliverable. In addition, the key dependencies need to be determined and based on the critical path who will monitor the project activities.

#### **4.1.6 Creating an escalation process**

The escalation process is used to ensure critical items are raised to upper management/affected parties early enough to prevent impacts to the project. It also ensures that the appropriate parties are informed and involved in critical decision-making. The project team should make every effort to make decisions and address issues on their own. However, when a resolution cannot be made, the items should be escalated to upper management ensure a decision is made before it impacts the project.

It is important to determine the company's level of tolerance for risk, readiness to change and the need to internally maintain control (Behre, personal

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communication, July 14, 2004). To assist in this area, an escalation process needs to be developed to be able to address issues as they arise.

### **4.1.7 Developing a financial plan**

It is a known fact that a developer in India may be paid \$12 an hour compared to \$60 in the United States. Therefore, it is important to not compare labor rates, but to look at the total picture (Benton, personal communication, June 7, 2004).

There are additional personnel and monetary costs associated with having an offshore team: vendor selection, additional scheduling and planning tasks including the transition plan and the disposition plan of current staff, licensing, technology improvement, security changes, process management and offshoring management (Clinton, 2004).

Some job positions may already exist within the organization, but often, additional resources are needed to support the offshore work to oversee and project manage the outsourced project. Frequently the programmers whose job is outsourced cannot fill these positions since they do not possess the necessary project or process management skill set. While cost savings are important, they cannot be the only consideration (personal account; Pattabiraman, personal communication, October 22, 2003). Other financial considerations include: customs, duties, software licensing requirements and the overhead is needed to manage them.

#### **4.1.8 Maintaining employee morale**

Employee morale should also be considered as jobs are moved offshore.

Staffing issues will arise and cooperation will be minimal if the perception is that onshore employees are no longer valued (Pellicano, personal communication, January 21, 2004).

Transitioning to an outsourcing arrangement may have a huge impact on employees, both in the United States company and in the Offshore company. Poor communication and employee relations could result in alienation of the employees and a strained relationship with the offshore team prior to the project kick-off. As jobs move offshore, people will be threatened with a loss of their livelihood and they will not be very receptive toward knowledge transfer. Prior to an announcement of the offshore project, work should be done to re-train and re-assign the United States employees, if possible.

Changes in team dynamics including offshore turnover, cannot be planned for entirely. People need to be receptive and adapt to the changes whether staff changes occur or not. Backups should be trained in the event there are personnel shifts.

Barriers can also include people that intentionally go out of their way to resist change. If people cannot accept the offshore arrangement, perhaps they need to be reassigned or let go since their barriers are costing the company time and money.

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Corporations can also hire consultants to teach people about change and how it is good for them. Books were given to help understand the situation. (i.e. Who Moved My Cheese? An Amazing Way to Deal with Change in Your Work and in Your Life) (Muto personal communication, December 20, 2004).

If you cannot change the people's behavior, change the people by reassignment/transfer and/or attrition. If there are people so opposed to outsourcing, they may not be able to work successfully with the offshore team. If a bias is formed, this could lead to uncooperative behavior, which could impact the team's deliverables.

The corporate or global strategy needs to be shared with all team members. People need to understand how important it is for everyone to pull together as a team. Management must communicate buy-in, as the United States employees will want and need to know how the offshore relationship will impact them. The uncertainty of not knowing if they have jobs can cause the greatest discomfort in the workplace (Muto, personal communication, December 20, 2004).

The communication plan is of the utmost importance. All affected parties need to be continuously informed and kept informed on all relevant project facts, details and schedules.

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By tying messages to the vision statement (communicate information and how it ties to the goal), people need to see that what they are doing has value and is part of the corporate goal.

Communicate successes to the team, so everyone shares in the success instead of just the problems. Communication is important in providing and receiving timely information. Conflict can result if communication is not shared. Before the transition phase, there needs to be open and honest communication with the employees before their trust is broken. There is nothing worse than the staff learning of the offshore outsourcing through improper communication channels. There are resources and tips on the Internet, from colleagues and publications, that may advise an organization on cultural tips, but good communication and common sense seem to be key in any business dealing.

### **4.1.9 Summary**

There needs to be upfront planning and training before going for a software subcontractor management arrangement (pre-work). By doing this, the team is setting expectations in plans, schedules and knowledge transfer. If the proper project management foundation is not done, the project timeframe could be off course resulting in the talent pool/resource availability not being available when needed. By not having the most experienced resources assigned to the project, it could impact the quality of the deliverable.

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Poor project management and controls have resulted in many failures (Drescher, personal communication, December 12, 2004; Anthony Pellicano, personal communication, July 17, 2004.) If the United States team hiring the offshore group has unclear objectives and expectations, they could be heading for disaster. Many groups believe the outsourcing will solve all their problems. This utopia vision could result in poor management and great disappointment throughout the project. If expectations are not realistic, the results will be an inferior deliverable with anger on both sides.

### **4.2 The contract**

The organization's goal for negotiating the contract and service level agreements must be to ensure all aspects of the requirements are met while achieving the internal goal to decrease costs down and increase savings.

Computerworld reports the best way to begin contracting is to hold a joint debriefing session to review the contract with stakeholders, those responsible for the execution of the contract, and the key functional areas (e.g. requirements, DBAs, quality assurance, quality control, configuration and project management). Involving both sides is critical to create a manageable working relationship. The contract is the foundation for the outsourcing relationship and needs to clearly define assumptions, scope creep limits, metrics, risks, potential issues, and processes including review, escalation, and touch points (handoffs between the United States company and the subcontractor/vendor). This sets expectations

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for both parties. The debriefing should include the highlights of the contract (obviously the financial arrangement should not be shared with all parties), and the intention or common goal they are striving to achieve. Although both sides of the arrangement have a common goal, each side has a different viewpoint including making the most lucrative deal (Ertel & Parker, 2004).

Since the customer outsources the work, they do not have the ability to control the contractor staff resource levels. This includes resources that are undesirable by the United States company and since they have outsourced the project, they cannot control staffing. A clause can be written in the contract for the ability to provide input regarding the removal of a specific resource. This needs to be in the contract up front to be sure the service is at an acceptable standard.

Both the United States and the offshore companies need to determine which cost/service trade-offs they are willing to make and how much risk they can tolerate. Determining how decisions are made, how issues will be resolved, disputes settled with the offshore company needs to be documented and followed by all parties (Perkins, 2004). The resolution to these items should be included in the contract between the two parties.

The contract should include the right to withdraw if the security is weak. Inadequate security should result in the removal of access. This ties to the contingency plan and the exit transition plan. There needs to remain checks and

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balances not just for Sarbanes Oxley, but also for good project management. Passwords and access controls need to be in place to maintain the balance.

Before signing a contract for offshore outsourcing or any other outsourcing relationship, a plan for what will happen at the conclusion of the contract is needed. A contingency plan and a risk mitigation plan are essential. In addition, the financial health and stability of the offshore company needs to be investigated to be sure that they will remain a going-concern.

Security is a primary concern with offshore outsourcing. Forrester research indicates that 63% of 161 users stated that security concerns are the reason that they are not outsourcing offshore (Rasmussen & Moore, 2004).

From a security standpoint it is important to be aware of the data the offshore company uses for testing. Test data should not contain any company proprietary or personal information. United States companies need to determine if they want to provide actual data or give the outsourcees access to their data mine.

Contracts should prohibit the use of subcontractors or reserve the right to approve subcontractors. The organization needs to know where their information is and who has access to it (Pellicano, personal communication, January 21, 2004).



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Security includes the customer data, server access, as well as the code/solution being developed offshore. Having checkpoints in the United States company's system will allow them to audit and inspect what during the project phases and to minimize what the end of the projects (Duffy, 2004).

Disaster recovery and business continuity should be required to assure that there is no loss of information or system access. Laws in India do not currently cover trade theft. For example, when source code was stolen in Bombay and turned up in New Delhi with a fired developer during a FBI sting operation there was no law to support the theft of intellectual property of the United States company (Rasmussen & Moore, 2004).

Both parties need to be strategically aligned and have the ability to adapt to any changes in the project. A change in position by either party could wreak havoc if there is not continuous communication in their positions. Not being strategically aligned could result in poor performance by the vendor and be reflected in their metrics. This could compromise the quality of the deliverable.

#### **4.2.1 Mitigating contract issues**

Software licenses and hardware requirements can become an issue. The outsourcing contract needs to clearly state who is responsible for providing the needed equipment and software.

Software licenses may not be available outside of North America. Checking software-licensing agreements prior to signing the service level agreement is important to mitigate the risk of a license problem. If the license agreements are not valid outside of North America and separate licenses need to be purchased, this needs to be thought through since once the offshore agreement ends, the United States companies may never have a use for those licenses again.

While creating the service level agreement, determine which party will purchase the software and hardware. If there are “nice to haves” software versus required software applications, both parties need to agree who will be making the purchases, as well as additional applications that are job specific (e.g. MS Visio, MS Project, code compilers). These types of applications may not be ordinarily considered when negotiating the service level agreement, but these unforeseen costs add up quickly.

### **4.3 Service level agreements**

Preparing for outsourcing includes the Service Level Agreement (SLA). Without the proper training, companies may not know what to include in the SLA or how to protect themselves. Objectives, service levels and measures must be well defined and approved. This will prevent unrealistic expectations. The more detailed/defined processes that are in place on the United States customer's side, the easier to outsource offshore. SLA's cover the performance of the vendor and the products and services that they will provide. The SLA should contain quantifiable and specific goals/expectations. It should also include penalties for work not satisfactorily completed, or rewards if expectations are exceeded (Pellicano, personal communication, January 21, 2004). The SLA should be clearly stated and be easily understood so there is no misinterpretation of expectations or loopholes. Metrics/performance expectations may include corporate standards to be followed, delivery schedule by phases, and performance/ service metrics.

There should be thoughts regarding corporate culture issues, CMM or other process expectations and project scope prior to the creation of the service level agreement. Measurable and realistic targets need to be included in the service level agreement i.e. turnaround time on defect resolution (TechRepublic, 2002).

The SLA should clearly state how the performance metrics would be reported, who will collect and present the data, and the frequency for gathering metrics.

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The roles and responsibilities should be clearly identified on both sides. This will assist in ensuring the proper allocation of resources.

There should be some give and take (negotiating room) on each side to be successful. It is also recommended to have in place a decision making protocol to determine clearly who needs to be involved in decisions and who needs be included in the communication for those decisions (Ertel & Parker, 2004). For example, if the offshore and United States customer determines a need for a software build to an environment over the weekend, certain actions need to be taken prior to the communication of this decision. Employees from configuration management, build and release management, DBAs, and quality assurance management need to be involved in the decision to validate people resources as well as the server resources. This is essential for concurrent tasks to be completed. There needs to be a continuous dialog about changes.

Coordination must occur for planning and managing change. A strategy for communication procedures and key messages should be developed early on to ensure that communications are sent and received effectively.

Since the SLA is a contract, it should clearly state escalations, exceptions, definitions including what is acceptable for the penalty/reward, service level (e.g. 5 days a week or 24-7), time frames for the deliverables, roles and responsibilities and any key assumptions. The United States company can hand over the project to the offshore group, but the offshore group is not responsible

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for the results. The SLA is important to protect the parties by having a reference as a “checkpoint” for management to refer to and be sure that their objectives are being met.

TechRepublic noted mistakes in some SLAs. These included a lack of organizational readiness, corporate culture, employee flexibility and their willing to accept the necessary changes. However, an overly lengthy SLA with language that would require a team of attorneys to decipher is not productive. The document needs to be meaningful and clearly understood both internally and externally. If it is not, this may provide a barrier that cannot be overcome (Staff, 2002).

The SLA should be customer focused. You do not want the customers to be dissatisfied with the outsourcing arrangement. TechRepublic cautioned not to set unrealistic performance targets. Performance targets must be realistic and measurable although they should not be documented in the SLA (Staff, TechRepublic, 2002). To obtain the best price, if price is a major concern, in some instances a longer contractual agreement may be the best approach, but the United States company could lose flexibility.

#### **4.4 Management Roles/Oversight**

Prior to signing a SLA both sides of the outsourcing arrangement need to make a decision and determine if it is in their best interest to commit to the agreement.

- Determine which functional areas need to be involved to resolve the issue or risk.
- Determine the roles/responsibilities of each functional area and be sure it is documented and communicated.
- Maintain a collection of best practices and lessons learned throughout the project and review at the project close out.

Since one of the goals of outsourcing is to reduce costs, it is important to compare price quotes, the vendors themselves, and look to negotiate pricing and work/requirements before the SLA is finalized (Behre, personal communication, July 21, 2004). However, once the contract/SLA has been finalized it is not easy to address issues that should have been included in the SLA. Prior to the conclusion of the project, lessons learned should be captured to further improve the next SLA.

#### **4.5 Managing the outsourced team**

The United States company needs to know what to expect from the outsourcing, how to oversee the outsourcing and how to provide direction to the outsourcees. However they need to relinquish control of the micro management of activities.

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Quality includes more than coding and testing. There needs to be quality requirements as the input, or it will be difficult to have quality outputs. Sizing, estimating of tasks, determining the predecessors and determining the project's critical path are important. They require thought and cooperation by the team to prepare and utilize the information, not to just collect it. A good configuration management process needs to be followed to assure the integrity of the baseline and the project artifacts. It is one of the critical areas for any project and this is especially true when being involved in an outsourcing relationship. Lack of a solid configuration management background can result in the frustration of all parties involved. Key functional areas (e.g. database administrators and developers) need to be trained in configuration management. All team members need to have an overall understanding of configuration management.

Scope creep is an issue with on and offshore projects. Process management is important to be sure processes and procedures are being followed and that there is the process capability across the project to meet the deliverables.

It is important to be receptive to and consider adopting some of the offshore team's best practices and lessons learned since they have access to a wide variety of projects. This technical expertise should be leveraged, keeping in mind that people are not always willing to change. Change takes many people out of their comfort zone and others may resist change simply because it is caused by the offshore group.

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Processes tied to the subcontractor management and their touch points need to be modified or communicated and resources trained. Accurate and complete communication is also important in providing and receiving timely information. Without the proper communication, people could make the wrong decisions. The Meta Group, Inc. recommends having a contingency plan in place in case the offshore contractor does not meet the deliverables

It is important to trust the offshore outsourcing subcontractor to provide solutions that meet the project and the customer's needs. This becomes more apparent to all parties, as they know more about the customer's business and their business objectives (Hayes, 2004).

### **4.5 Mitigating the management risk**

Mitigate delays by having the onshore and offshore office set-up including passwords, security clearances, security access, and software requirements done in advance. There are times when requirements will need to be clarified as the offshore team may have questions on wording and need clarification of the requirements prior to beginning the work. Hidden costs are quickly added into the project for undocumented, personal expenses incurred by the team when onshore.

To be effective, metrics should be used consistently across the organization. If a portion of the business is outsourced, the same metrics previously used should



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be kept whenever possible to allow for comparison. The metrics should be validated and not just reviewed on a regular basis. The management team needs to validate that the subcontractor is maintaining the metrics. Therefore, the metrics must be part of the contract/Service Level Agreement. It is also important to review the metrics to be sure they are providing an accurate picture of the project. If there is no value in tracking a metric long term, then it should be discontinued. Without collecting and reviewing relevant metrics it is impossible to improve or know that there is a process break down.

Measurements must be captured to determine if the project is on track and successful. From task sizing and estimations to requirements traceability there needs to be an end-to-end solution. This includes any change requests and ultimately to the production support metrics. Metrics must be communicated and a good leadership team will act on sub-par metrics.

Risk mitigation should include the engagement and enablement of the entire team/organization. It is important to remove barriers that make it difficult for people to perform their jobs. Barriers include impractical processes, exceptionally long turnaround times, redundant/unnecessary signature authorizations, hardware and software issues and purchases. Lost productivity can be tied to paperwork and poor processes. It is important to never underestimate the role of connectivity in an offshore project. Often there is significant downtime while paperwork is processed for system access/account

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creations (personal account; Natarajan, personal communication, November 19, 2003). High levels of authority may require additional levels of signature authority and therefore may be required to gain offshore access. Lead-time may vary by corporation or even by team. Pinpointing what additional requirements are needed in advance (i.e. mother's maiden name) can shorten the turnaround time.

Offshore employees, required to come to the United States, are supplied with a document explaining various topics about traveling, working and living in America. Tips both on-line and in these company specific documents contain information about the United States tax laws, Social Security, telephone courtesies and popular American phrases – which are in many cases they are obsolete. Language is important. Certain words have different meanings in the United States versus in India. These simple everyday words and phrases are a few examples of how language barriers could impact communication.

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A few examples are:

United States	India
Okra	Lady fingers
Potato chips	Wafers
Undershirt	Vest
Vest	Waistcoat
IBM Compatible	IBM Clone
Student has Graduated	Student has Passed Out

(Pattabiraman, personal communication, October 13, 2003; Natarajan, personal communication, November 20, 2003; Sapp, personal communication, October 19, 2003; Revanur, personal communication, December 20, 2003)

### **4.6 How to Transition Out of an Outsourcing Arrangement**

The best time to plan for when the outsourcing arrangement will end is during the negotiations, preferably during the original contract negotiations. Like any other contract there should be a buy-out clause, and a list of causes for termination of the contract by either party. Agreement should be made on how work would be taken back into the company, outsourced to another group, and the roles and responsibilities for the hand-offs for key deliverables for the transition. There could be a 14-30 day warranty on the work depending on the relationship. If there are defects that are found after that period, the offshore group is not responsible.

The perception of why people dislike offshore outsourcing is primarily due to the loss of jobs, lack of the English language skills and misrepresentation of the skill

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set of the offshore employees. The misrepresentation of skills is frequently not apparent until after the business activity has commenced.

Hewlett Packard had numerous complaints in 2003 when they sent their help desks offshore. Their consumers felt the language barriers prohibited them from getting their customer's service issues resolved. The Indian help desk support employees had heavy accents. In addition, the use of headsets increased the problems with understanding the customer and having the customer understand them (Barbara G., personal communication, April 2, 2004).

Cultural awareness is making sure that both sides of the arrangements are made aware of cultural differences and are sensitive to those differences. Cultural knowledge is creating effective ways to work with the cultural differences and practices (Ahmed & Lemkau, 2000).

## 5.0 Case Study

An Information Management group within a Fortune 500 company in 2003 hired Wipro Technologies for their development needs. They needed to improve both the quality of their software maintenance and development and improve their time to market. Wipro Technologies, an Indian based company was selected due to their ability to provide high quality at low prices with successful repeatable processes and with the necessary skills to fill the team's gaps. The primary motivators for outsourcing were to satisfy corporate cost reduction directives and quality needs.

The transition was not as smooth as it could have been as the planning and preparation of the team was not well thought out. Prior to Wipro personnel arriving onshore, hardware and software should have been obtained, a training plan and materials should have been created, user identifications should have been established and a knowledge transfer plan for both the Wipro people, as well as the United States team, should have been documented.

The offshore people arrived onshore and were not consistently well trained and talented as their company assured the United States team. While some were really sharp and had good ideas, there were some that were just trying to get into and stay in the United States. The Wipro staff members were supposed to be CMM Level 5 certified, but their offshore configuration manager copied the code directly out of production and not the source repository. There was also a lack of

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respect with United States female managers giving direction. This cultural issue resulted in many wasted hours as work was intentionally held up.

Additionally, the offshore group was not checking code in and out of the repository by as required in good configuration management. They were copying code from the production environment, which meant they were not working in the appropriate environment. This resulted in the required code being on their desktops offshore and not available at build time in the United States. The outsourced project managers that were onshore did not have a full understand of the issues occurring offshore. The quality of work was unsatisfactory for the first two releases. Time was given to allow for a learning curve, but the defects were numerous and severe. Although Wipro has the reputation for having been assessed at Level Five on the SEI CMM, it was not apparent by the actions that were taking place.

Having the distinction of being a CMM Level 5 company does not mean all staff members are level 5 with their processes. It is a snapshot in time of a particular organization or team. This label frustrates the client when not all of the vendor's resources are at a particular training level (personal account; Metzger, personal communication, March 28, 2004).

The original objective was to complete the software release the team was working on and then begin the planning and strategic planning for future

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releases. The first release took longer than what was planned. The result was that both Releases 1 and 2 were being developed and tested at the same time. Code was being checked out and not checked back in or if it was checked in it did not have the proper labels in the code repository. Items were frequently not included in the build or the code would not compile. This resulted in unnecessary and needless work by the configuration management group. There were so many emergency production fixes and unplanned point releases that the release numbering schemas were useless. There were planned Emergency Production Fixes (EPF). The planned EPF was to include items from the original release plan that fell out of the build or were requirements that could not be satisfied in the time boxed window set for the project, so they labeled “de-scoped” due to time constraints in put in the EPF builds. The true definition of EPF is to address a ‘surprise’ issue that arises from a release.

No matter what release numbering strategy was used, it still resulted in later releases occurring before others. To alleviate some of the issues, they should have held a release to include more fixes since they were not all major issues, or to not promote a release to production until they released the planned build. These numerous and frequent builds resulted in confusion to business partners. The end user’s PC’s crashed as releases were forced (e.g. It would be like playing a round of golf and changing the order of the holes played.)

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Another major issue was that the offshore group and the United States teams were in different time zones. When the offshore group checked code into the repository, it was dated ten hours ahead. If there were issues with the code and it required someone on the United States side to modify the code, the code base became corrupt. Microsoft Visual Source Safe could not support an older time stamp for a newer version of code was created the past (e.g. the Indian team was time stamped was 10 PM Friday and the United States team needed to update the code when they arrived in the office but their check in was Thursday). (Microsoft 150643, Microsoft 248240). During the same time that the code base was trying to be restored, the configuration manager was informed that the Visual Source Safe repository on the server was going to be moved in three weeks. At this time, the chief engineer on the United States company pushed to migrate the United States and offshore teams to use a free tool (the Visual Source Safe licenses were very costly). The decision was made to move to Win CVS is Concurrent Versioning System (CVS).

However, the support person given the task to set-up the environment made the determination to use Tortoise CVS Client. This change resulted in no documentation being prepared for the team's use and inadequate training to prepare the users. Issues surfaced when code had to be checked out at the module level not the individual level. Labeling would become easier except the emergency releases would continue to result in release numbering issues. Code was not their only area of concern. The schedule, requirements, design plans,



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data integrity and internal configuration management audits would prove to be on-going problems. All of these issues impacted the concurrent deliverables.

Team morale on the United States team was poor with many people working seven days a week for more than sixty hours per week to get the job done due to the United States company having too many variables all occurring simultaneously. There were staff changes as a result of the offshore projects. Some changes occurred early on, and others occurred at the end of the third release. A second wave of people left the group as a result of the frustration, some were moved onto another project, and others were let go as a result of the offshore developers taking their jobs. Personnel turnovers occurred both with the offshore group as well as their onshore staff. The most significant outcome was that both Wipro project managers were removed from the account and one was let go from their company.

Performance levels were not clearly measured and quantifiable as suggested by Santana in TechRepublic. The statement of work/contract stated that the vendor would keep metrics, but they were not. It was not possible to easily determine performance levels since they were not quantifiable (Santana, 2004). The United States team/customer tried to capture metrics to determine the root problem, but without cooperation from the vendor it was impossible. Going forward they should have defined a plan for the metrics. This plan would include rules around

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each metric, an agreed upon variance, a process for gathering metrics, the metrics format, and the cadence for delivering the metrics.

### **5.1 Case Study Conclusion**

According to Martorelli & McCarthy (2004), it is critical that prior to beginning the outsourcing journey that customers evaluate their internal readiness. Based upon this assessment, the project teams referenced in the case study lacked mature processes and were a resistive culture. The company would have been better off by selecting another United States company that has offshore branches. It is the belief of Martorelli and McCarthy that the lack of IT readiness is a larger barrier than lacking cultural readiness.

In this case study, the right people (i.e. the functional owners of processes) were not engaged early enough to help ask the right questions about the processes required for updating workflow and the reporting structure. Until those types of issues were resolved the situation was chaotic. People knew that their jobs were being outsourced and they were not seeing this venture with the offshore group as a positive step. Comments such as “we outsourced all that” were made. (personal account). The offshore group was not always aware of items being part of their job and often tasks were overlooked. Wipro was responsible (per their contract) for the requirements traceability matrix, but when the configuration manager audited their artifacts, it had only been updated once.

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Consideration was not given to importance of certain issues. Some of these issues included: cost including the compensation of employees, infrastructure and regulatory expenses, people skills including experience, skill-set, resource availability, and language skills (Natarajan, personal communication October 14, 2003; Revanur, personal communication March 4, 2004).

As the work was sent offshore, the core team's focus should have been on monitoring the subcontractor's/vendor's activities, quality control and quality assurance, configuration management and production support and maintenance of the solution (Epner, 2000, p. 3). This was not the case, as tasks were split on and offshore and shared between the vendor and the customer. It was not a smooth well-defined process. The shift of skills needed to support the outsourcing relationship was not well planned.

Someone needs to own the relational management of the contract. This includes working on trust and control in order to optimize the working relationship (Behre, personal communication, July 21, 2004). Trust includes having the technical capability to do the job and that the organization has the financial capability to fund the relationship. Dependability is also important. Both parties need to depend on each other for deliverables, and what consequences to expect in typical situations (e.g., missing deadlines, code not check in prior to a software build) (Pattabiraman, personal communication, October 30, 2003; Bishoy,

personal communication, March 28, 2004). Acknowledging the risks open and honestly was not part of the equation, but it needs to be.

### **5.2 Case Study Process Improvement**

Six Sigma black belt project was conducted at the corporate level with the following results (Drescher, personal communication, December 12, 2004). The best process improvement was the institution of stronger software subcontract management processes and training. The statement of work was enhanced to include measurement processes and defect tracking, acceptance criteria and consequences, and reviews with senior management were revised. The acceptance criteria and consequences were areas that were previously poorly addressed. They now include design reviews, code reviews and their results, unit testing, defect containment levels and release documentation.

The design reviews identify defects prior to coding and it establishes a common understating of the functionality and performances. Code reviews are now scheduled, the United States company now approves the test plans, and the review results are formally submitted to the United States company. This includes the verification that the code meets the corporate standard and that it has been validated and accepted through integration and acceptance testing. A code sampling was also instituted as the United States company reserves the right to determine that it is defect free. If the sample is not 100% free of errors, the subcontractor needs to rework the code. At the conclusion of the unit testing,

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the vendor will sign a sign-off stating that all unit testing has been completed with acceptable results. At release, the vendor signs off again to assure that the release code and the documentation match. This certifies that the release documentation and code are accurate and repeatable when installed in the company's environment. Consequences have finally been added to the contract and they will be enforced.

Release documentation now includes critical information to be shared with the end user including set-up/install instructions and the runbooks for production support (Drescher, personal communication, July 29, 2004). Defects are now documented from the requirements phase through production and are prioritized and tracked until closure and captured in a defect containment matrix. Defect containment level by phase is 70% or above. The defect containment will measure the process capability to detect and remove defects near the defect injection point.

The United States company will expect the subcontracted vendor to adhere to the coding standards during code development. This would save the company time and money going forward with defects, untested code, and results that were not shared by the vendor who claimed the test results were proprietary information. It will also identify defects prior to coding.

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To better protect the subcontracted vendor, use cases are now required and provided the vendor to show what reasonable actions or tasks an end user might want to accomplish. This will now provide them with a better understanding of how an application is expected to work and perform. Use cases also show how the functionality is reviewed during acceptance testing. It gives the vendor a better understanding of how the application should work and how the functionality will be reviewed during the acceptance-testing phase.

Consequences for non-compliances result in the right for the United States company to impose a 7.5% surcharge of the invoice for non-conformance of the vendor (Drescher, personal communication, July 29, 2004).

The United States company's global procurement organization had created standard service level agreements and contracts and devised offshore outsourcing processes and procedures. The global procurement group research on offshore outsourcing and they have created a preferred vendor list to assist teams/organizations (Drescher, personal communication, July 29, 2004). This improves efficiencies within the United States company by having the standards in place and accessible for all to utilize (Moore, 2004).

## **6.0 Conclusion**

Offshore outsourcing can be very effective with the proper procedures in place both before the contract is signed and while the work is being done.

When outsourcing, extensive preparations are important in order to make sure tasks and risks have been completely planned for or a mitigation plan has been put into place. It needs to be a team effort to keep employees involved and informed. This will help alleviate some tensions with the jobs being outsourced.

There are issues that will continue to arise if the outsourcing relationship is not managed properly. These issues need to be addressed prior to outsourcing, and once outsourced close monitoring of the project is required.

Having a mitigation plan in place for the critical and major potential risks will reduce time and costs if the situations come to fruition. It also forces internal groups to gather and monitor their own performance metrics that they may have been lax in preparing.

Outsourcing can be a very successful venture if it's done for the right reason and not just to pass off undesirable tasks. Clear communication plans and setting expectations will help to get the project off on the right track. When outsourcing, it is important to have good, repeatable processes in place. If it is not possible to put these processes in place, it is important to secure a vendor willing to adopt

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these processes during the outsourcing. The best outsourcing is where the work is completely encapsulated and given to another entity to perform and where the other entity is held entirely responsible for the work. Coordination of efforts is still required between the outsourcer and the outsourcee. This could open the possibility of problems, which have to be thought of beforehand and the contract structured appropriately. Outsourcing can be beneficial to all parties involved, but it is not necessarily a panacea to better business operations. The biggest gain with outsourcing may be the improved quality and processes.

In conclusion, it all comes down to the people and processes involved to ensure a successful venture. Contracting and managing contracts are very important for both onshore and offshore outsourcing. Global sourcing of IT and other services will continue as long as there are wage differentials between countries and demand from other countries and tax incentives.



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