How is Outsourcing Going to Affect SAS Programming?

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ABSTRACT

Globalization is the reality of doing business in today's economic environment. SAS programmers and organizations that use SAS who choose to ignore it will face extinction. Outsourcing has had a significant effect on many industries dealing with information technologies. Knowledge workers face the same challenges now as manufacturing workers faced in previous decades. This paper will give you insights into offshore outsourcing as it pertains to SAS and provide strategies on how to navigate and work within this environment. Some of the topics discussed include:

- Pros and Cons of outsourcing SAS related programming
- Types of SAS programming within the Pharmaceutical industry that will be outsourced
- Strategies on successfully managing a local team while outsourcing SAS projects

Outsourcing is not a new phenomenon but rather another step in the evolution of doing business in a technology driven global economy. SAS work is increasingly being outsourced to local Contract Research Organizations. Companies give employees the flexibility to telecommute and work remotely on some days of the week. The use of CRO's and practice of telecommuting give companies the flexibility and competitive advantage. Offshore outsourcing utilizes some of the same methodologies to provide companies with an even more competitive method of performing tasks such as research and development. It is therefore prudent for organizations to evaluate how outsourcing will impact their SAS programming work.

INTRODUCTION

Offshore outsourcing can be a very emotional topic. Only a few months ago, we had a contentious presidential race that used this as a campaign issue. It does have profound affects on jobs and how Americans will be working in the future. Rather than focusing on the emotional aspects of job loss, this paper will evaluate the issue from a national and business perspective. No matter if you are for or against information technology offshore outsourcing, it is certain that it is a growing phenomenon. There are several studies that show the fast rate of increase in several IT sectors. An IT outsourcing study conducted by Diamond Cluster International showed that 86% of Global 1000 IT executives and providers of IT outsourcing services who participated in the study expect outsourcing to further increase next year. This study indicated that although reducing costs is the number one driving force behind outsourcing, another factor is that organizations are trying to free up internal resources to focus on other business critical functions. A University of California Berkeley study estimates that 14 million service jobs

will be affected by outsourcing. Research has shown tremendous growth in the area of offshore outsourcing within the last ten years and the trend is not slowing down. An IT research firm, IDC, estimates that IT offshoring will increase by more than 500 percent by 2007.

Although the evidence from research shows an increase in the use of outsourcing, other studies show how ill-prepared American companies are. A survey was conducted in late 2004 and early 2005 entitled "Crunch Time: The Competitiveness Audit" of more than 300 CEO's and business executives at North America technology and telecommunications companies. The results show that most companies have not yet put in place new processes and practices to compete in a rapidly evolving global marketplace. Only about one third of these organizations surveyed has instituted processes for accessing their competitive functions. The Pharmaceutical industry is more conservative and moves much slower than its IT counterparts. Therefore, even less Pharmaceutical companies have progressively instituted processes for implementing outsourcing strategies. It is prudent to act cautiously while trying to implement a new process such as offshore outsourcing, but to ignore and not act within a competitive environment is a formula for failure.

PROS AND CONS

The number one advantage and reason why most organizations embark on an outsourcing project is to bring down costs. The cost of employing talented people with minimal operating costs makes offshore outsourcing an attractive solution in a competitive environment. It is however not a panacea. If the project is ill defined or the wrong kind of project is selected, it may cost more in implementing an outsource solution.

An advantage to outsourcing can be seen in less mission critical tasks since it can free up resources for your team to focus on more critical projects. For example, SAS program validation and data listing or CRF tabulations can be outsourced to relieve your Biostatisticians and SAS programmer analysts. The Biostatisticians can therefore devote time to designing the analysis plan or writing the final report, while the SAS programmer analyst can focus on developing CDISC compliant analysis datasets or programming complex summary table. This is an example of how outsourcing the correct project can really allow your team to work more efficiently in terms of both time and cost. If the right projects are selected, it will boost the motivation of the team since it will give them the most challenging tasks. However, if communication is not clear, outsourcing can damage morale and can be misinterpreted as a form of removing opportunities and jobs.

A disadvantage to outsourcing can be apparent when the project to be outsourced is not clearly understood. Many managers go into implementing an outsourcing project before they have a thorough understanding of how to implement a project. This usually is achieved with experience. For example, let's say a data mange evaluates the tasks that potentially will be outsourced in his department. He has data entry clerk's entering the data, clinical data associates writing edit checks and cleaning up the data. The data associate's are also working with the graphic's group in designing case report forms. He decides to outsource some of the data entry, edit checks programming and case report form design. He sees that these are potentially good candidates for outsourcing. The project selections were good but since he is new to the department, he has not clearly defined SOP's for these functions. In addition, he has not had extensive experience in managing his team internally with these tasks. Once he begins to have these tasks outsourced, there is a barrage of questions from his internal team on how to work with this workflow in conjunction with the outsourced members. The outsourced team is even less familiar with the process and starts out slowly because there is no clear definitions on how to perform these tasks. This is a common example of how a potentially good outsourced project can end up being a costly when not clearly understood.

In going through the process, the data manager started to define his SOP (standard operating procedures) and WPG (work practice guiles). He defined his process in a chronological fashion starting with the case report form design. He defined the procedures in laying out the form's and working with SAS annotated field's. He then documented how his staff perform's double key entry along with reconciling deviations. There were SOP's and WPG's developed for edit checks and how those deviations were resolved. The data manger later discovered that the outsourced project forced him to more clearly understand the work flow of his group since this is critical in communicating to the external team. What first appeared to be a bad outsourcing project turned into a good lesson and became an opportunity to better understand and streamline the workflow within a group.

IMPLEMENTATION STRATEGIES

There are many strategies that can be followed and books written on this subject. The scope of this paper is not intended to be exhaustive or comprehensive. Rather, it presents a few examples to illustrate strategies that you can generalize for your own situation. The examples focus on the use of SAS related work in both data management and statistical programming.

STEP 1: Identify all the tasks which potentially are well suited for outsourcing. Some of the criteria used to determine how a project qualifies are listed below.

Qualifying Factor	Reasons for Adaptability of Outsource
Non Critical Tasks	It is important that the tasks are not the core function of your organization. These projects are usually ancillary or play a supportive role to the main function of your team. This will give you ultimate control of the intellectual property or core function of your organization.
Clearly Defined Tasks	The more clearly defined the tasks, the more likely it will be successful in being outsourced. Communication is critical in an outsourced project and the more clearly the project is delineated and enumerated, the easier it is to execute. This can be in a form of SOPs or WPGs. Diagrams that show work flow are helpful. This can also be described in a document as long as the tasks are functionally and chronologically defined.
Remotely Executed	A good test for any outsourced job is to implement it with a telecommuter or do one off site remotely. However, in general, if the work done is on a computer, this usually qualifies. *"If you work behind a computer screen, your job is up for grabs,"* says Sanjay Kumar, former CEO of Computer Associates.
Not Highly Prized	If everyone in the department is jockeying to obtain a particular job, it may not be the best one to be outsourced. However, if the task needs to get done but the team members do them because they have to, this is usually a good candidate.

Some of the examples mentioned above that fit these qualifying factors include:

Data Management

- Case Report Form Design and SAS Variable Annotation
- Data Entry
- Data Entry Screen Setup
- Edit Checks Programming
- Quality Control and Data Integrity Validation

Statistical Programming

- Case Report Form Tabulations
- Data Listings
- SAS Program and Data Validation
- Simple Tables and Figures Programming

STEP 2: Define Requirements of Your Outsourcing Needs

Each project will have its own specific requirements. The requirements include details on how your team will work with the external vendor. In addition, there are requirements for the vendor that you select. This includes their experience in the area of work that your project requires. There are logistical requirements such as hardware, software and telecommunications. This is a very descriptive list of all the jobs that need to be performed. Conceptually, it is similar to writing a job description but in this case, it is larger, describing the entire project rather than a job for one individual.

STEP 3: Validate Your Systems

Regardless of your plans to outsource, it is important to perform validation on all your software and hardware systems. This will allow you to catch any system integrity issues that arise within the internal group. The risk analysis during the validation process gives you a clear picture on how your system functions associated with external changes including security issues. Your outsourced project is more likely to succeed with systems available and running at 24/7 as compared to a non-validated system with a large gap in support and down time.

STEP 4: Define SOPs and WPGs

Regardless if you are planning to outsource, it is essential that you have a good understanding of your work flow. Some of the SOP and WPG will be an outgrowth of the validation of your systems. Effective SOPs and WPGs are established when the entire group communicates what and how they do their jobs. Once management and the entire team communicates to each other effectively, this will overcome many hurdles during a outsource project implementation. Although the SOPs and WPGs can be adapted to the outsourced team, it is important to recognize that the internal team is different. You may need to update your existing documents or write new SOPs for the external team.

STEP 5: Internal Prototype

Before any work is sent off site, it is important to try to implement the same tasks with existing team members. The internal team member can work at home or a remote site to simulate being outsourced. Telecommuters are therefore good candidates to perform experiments on outsourcing projects. You can break off a small team and have them function as an independent "CRO" and monitor if they are able to deliver without constant interactions with internal resources.

STEP 6: Research and Analysis of Outsource Vendors

The research should start out very general and then focus on a particular vendor that fits your needs. The following is one example of a research analysis for vendors in Vietnam due to its cost effectiveness.

Evaluate Criteria	Research Results Analysis
Locations for SAS Programming and Related Software Outsourcing	? The three countries used during evaluations include: India, China and Vietnam. ? Vietnam is relatively young in this field, 10 years compared to other countries.

Existing Companies in Vietnam	? There are over 100 companies that implement outsourcing. ? 2/3 in Ho Chi Minh City (Saigon) ? 1/3 in Hanoi ? State Owned Enterprises Example: Vietnam FPT-soft, AIC, CDIT, VASC, COSIS. ? Foreign Invested Enterprises Examples: PSV, GCS, Silkroad, GlassEgg, PSD, ELCA, Silverlake, Digitexx, NEC Soft, Fujitsu Soft, ATVN, Sang Tao, GSE ? Privately Owned Examples: MXI (Meta-Xceed, Inc), CMC, Harmony, Vietsoft, Elcom, Quantic, Lacviet, AZ, Dolsoft, Diginet, TMA
Locations (Software Business Parks)	Ho Chi Minh City (SSP, E-town, QTSC), Danang (Softech), Hanoi (Hanoi IT Park)
IT Education	University, College
Financing	Investment funds: Dragon Capital, IFC, MEF, IDG
Foreign Outsourcing Countries	North America, Europe, Japan
Vietnam vs. India	? India has better English skills ? India is more established but also more expensive (at least 50%) ? India is more bureaucratic ? India attrition rate approaching 50% vs. less than 10% in Vietnam
Vietnam vs. China	? Vietnam has better English skills ? China is slightly more expensive ? China attrition rate more than 30% vs. less than 10% in Vietnam
Outsourcing Strengths	Good supply of college educated and skilled people, Increasing government support, Political stability, Low attrition and low cost, Vietnamese Americans and Overseas Vietnamese connection
Outsourcing Weaknesses	Internet still expensive and slow, Limited IP enforcement, Poor communications/marketing skills

After an analysis of the particular country and then vendor, you will have a better understanding to see if it fits your requirements. This is just a summary of an example research results. Your research analysis and results will differ depending on your particular project requirements.

STEP 7: Communicated during Implementation

Managing an outsourced project requires extra communication techniques that are different from managing a team locally. You need to keep the team motivated and work productively while not being there. This is accomplished by establishing a good relationship with the project manager. The outsource vendor will assign you a project manager that would be available to meet you face to face to go over progress of the project. That project manager will then interface with the remote team to ensure that your project requirements are being met. The project manager may also travel to the remote site so you can stay in touch with the project manager by the use of the following tools:

- Instant Message – This is a very cost effective method of interactively communicating with your project manager regardless where he/she is located. You are able to cut and paste things electronically into your messages similar to email with the distinction that it is interactive.
- Peer to Peer Telephony – You can also save on international calls by making telephone calls via the internet. Services like Skype are cost effective ways of staying in contact via voice.

Emails are of course a very effective way of communicating non-interactively. You can also use the traditional phone which may be useful when your project manager is not reachable via a computer. If you set clear project requirements and have good channels of communication, this will ensure the progress and success of the project.

The seven steps presented in this paper give you techniques and strategies toward sgetting your outsourcing project started. There are more project management challenges that are involved in maintaining a project but the biggest challenge is the inertia of getting things started. These steps can help you get over that initial hump.

CONCLUSION

The globalization of information technology has significant impacts on how knowledge workers, such as SAS programmers and related professionals, do their work. The fastest growth and change in the way we do our work is affected by projects being outsourced to organizations offshore. Rather than gripe about the situation, take control of your work by adapting to the changing work environment. The changes are driven by the bottom line but there are also other forces such as optimizing internal resources. Internal team members are relieved of time consuming tasks and can therefore better focus on the core business. This is accomplished by proper selection of projects that are not mission critical but supportive to be outsourced. The success of these outsourced projects is dependent on how clearly they are defined. This involves getting your internal team together. If you have your internal operations functioning optimally through clearly defined SOPs, this will be reflected as an extension within outsourced projects. When selecting an outsource vendor, thorough research will help you understand your requirements and if the vendor can meet these requirements. Once a vendor is decided, maintaining and bringing the project to a successful completion relies on creative communication techniques. There are new work processes that you need to adapt to within this offshore outsourced environment in order to survive and thrive. Like the survival laws of Darwin, if you don't adapt and stick to the status quo during a period of evolution, you will be relegated to extinction.

REFERENCES

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