

Global IT Outsourcing: Metrics for Success of All Parties

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ABSTRACT

This paper presents a strong case for the use of metrics (data that can be measured) in establishing the success of an outsourcing engagement related to information technology (IT) services or IT enabled services (back office business processes). It proposes that the success of an outsourcing engagement should mean the achieving of goals of all three parties - the company that outsources the work (outsourcer), company that is going to perform the outsourced work (outsourcee) and the end user who uses the product or is a beneficiary of the service. With the use of appropriate metrics, the outsourcer and the outsourcee can mutually position themselves for success with the use of appropriate metrics and ensure that the end user needs are met. This paper presents a framework for metrics, then goes on to present the best practices that should be applied in selecting metrics. While making the case of a proper implementation of the selected metrics along with an appropriate system of incentives and rewards, this paper concludes with a discussion of the need for composite reporting metrics duly agreed upon by both outsourcer and outsourcee.

KEY WORDS: Information Technology, Outsourcing, Metrics, Service Level Agreements, Outsourcer, Outsourcee, Offshore Outsourcing, Onshore Outsourcing.

INTRODUCTION

Global Outsourcing (also known as offshore sourcing) has become a common phenomenon in the IT world. With the power of high speed telecommunications, it is now possible to access skills for almost everything - from answering the telephone to developing computer systems - at a fraction (10% - 20%) of the costs in the USA. In addition to traditional IT outsourcing, the latest trend is to outsource business processes as well. The driving force is the increasingly competitive business environment in the USA. The pressure to lower costs is forcing companies to go for (offshore) outsourcing. This coupled with other more strategic factors (ready access to technical expertise, access to new markets, etc.) are driving the movement toward the outsourcing of business processes in the services sectors (Merchant, 2003).

It should be mentioned that IT outsourcing has been practiced in the USA since the late-eighties. Some of the notable examples are Kodak's outsourcing its IT functions to IBM and GM outsourcing its IT functions to EDS. To distinguish from the offshore outsourcing, this paper calls it onshore outsourcing. The onshore sourcing was driven more by the strategic goals and less by the operational goals such as cost savings. Also, since the onshore sourcing did not result in moving of jobs overseas, it did not create the issues and controversies the offshore outsourcing has created. The biggest controversy about offshore outsourcing is the perception (and reality in some sectors) of the loss of jobs - jobs moving overseas to be specific. Even though the loss of jobs caused by outsourcing is provoking resistance (Hayes, 2003) in the USA, it is generally believed that the offshore outsourcing is here to stay at least for the foreseeable future.

One of the big debates about the offshore outsourcing is whether the promised cost savings are for real. First of all not much is published on this topic in scholarly journals and only a few reports are available in trade magazines. In a much publicized article in a trade magazine (Kharif, 2003), it is reported that many companies come short in realizing the expected cost savings because they fail to include the hidden costs of outsourcing. The arguments presented are like this: offshore IT outsourcing is a lot more complicated than moving traditional manufacturing operations overseas; IT quality (or the lack of) is much more difficult to assess and often is poor; IT being an integral part of every business process requires a greater degree of knowledge transfer and management, and hence incur the additional costs. The article quotes Weakland, a partner at management consultancy Diamond Cluster, "Most companies can't accurately measure their productivity and costs prior to and after outsourcing. Most look just at wages". The article claims that software programs developed offshore have usually 35% to 40% more software bugs than software programmed domestically. Many companies tend to send expatriates to set up their operations abroad -- and their wages usually run high. Then, there are the costs of additional executive travel and the costs of extensive training in language and culture.

This view is not shared by many others, who (Gardner, 2003) claim savings are real and cannot be ignored. The factors contributing to the savings are network advances in security, leased lines, VPN technology and storage. Often these savings are seen not in the first outsourced job but in the subsequent jobs. A review of these and other similar articles in the trade magazines give the impression that there are two camps – those who are for outsourcing and those who are against, each with their points and counterpoints. Table 1 below summarizes both views.

PROPONENTS' POINTS	OPPONENTS' POINTS
<p>At Micro Level</p> <ul style="list-style-type: none"> - Savings too large to ignore - Don't generalize first job's experience - Savings in the follow-up jobs - Advances in technology (VPN, security, storage) making outsourcing painless - If you offshore a bad process, you cannot expect savings just by outsourcing. <p>At Macro Level</p> <ul style="list-style-type: none"> - In the long run more higher paying jobs created - Makes market place more efficient 	<p>At Micro Level</p> <ul style="list-style-type: none"> - Overall savings not as initially thought - Hidden costs of <ul style="list-style-type: none"> • Knowledge transfer • Additional management • Poor quality • Additional travels • Training in language and culture <p>At Macro Level</p> <ul style="list-style-type: none"> - Loss of jobs - No evidence of new jobs - Security and Privacy at risk

Table 1: Comparison of the Two Views on Off-shore Outsourcing

The problem with these articles in the trade magazines is that their claims, even if they might be correct, are often unsubstantiated and hence are unverifiable. Clearly, the success in offshore outsourcing is not a sure thing. What is equally challenging is the difficulty in measuring the success. What makes the matters even more unclear is the fact that outsourcing is often used as a scapegoat if the project fails. The best (and perhaps the only) way to reasonably determine the level of success and settle these debates is to make use of the appropriate metrics.

But first, we want to clarify the use of some key terms - outsourcer and outsourcee. We are going to use the definition proposed by Palvia (2003). Outsourcer is the company that outsources its work to some other company. Outsourcee is the company doing the work or providing the service. Unfortunately, the term outsourcer has been used by others [10] to mean the service provider company - what we are calling outsourcee. And, the nomenclature of client company has been used for what we are calling outsourcer. The definitions proposed by Palvia (2003) will be used in this paper.

LITERATURE REVIEW

As mentioned earlier, IT outsourcing has been around in the USA since the late-eighties. Because of the financial and social implications, the IT (outsourcing and other) issues have been covered by almost all leading trade magazines and newspapers. The academic research on IT related topics started with a discussion of IT productivity paradox and the value of IT investments, which generated a great degree of attention (Baily and Chakrabarti, 1988; Brynjolfsson, 1993). Venkataraman (1997) proposed that an IT organization be looked as a value center of four components - cost center, investment center, profit center and service center, each having its own distinct metrics. Larson (1998) discussed the concept, rationale and structure of a good service level agreement (SLA). He talked not only about the SLAs related to the actual services rendered but also the SLAs for the support services needed for delivering the actual services. For example, the turnaround time for fixing a software bug is an example of an actual service SLA whereas the review/status meetings, performance reporting will be examples of support services.

DiRomualdo and Gurbaxani (1998) analyzed the role of metrics in outsourcing to achieve the strategic IT goals - its strategic intent, information services improvement, business impact and commercial exploitation. They postulated that the primary requirements for success in outsourcing are outsourcee's service consistency, technical competency, compatibility and continuity. Lacity and Willcocks (1998) identified five best practices: (1) Selective outsourcing decisions had higher success rates than total outsourcing or total insourcing decisions. (2) Senior executives and IT managers who made decisions together had higher success rates than either stakeholder group acting alone. (3) Organizations that invited both internal and external bids had higher success rates than organizations that merely compared external bids with current IT costs. (4) Short-term contracts achieved higher success rates than long-term contracts. (5) Detailed fee-for-service contracts had higher success rates than other types of fee-for-service contracts. The critical elements of three contracting models are described: fee-for-service contracts, strategic alliances/partnerships, and buying-in of vendor resources.

Hurley (2001) emphasized that the retention of qualified people is key to success of an outsourcing project. Levina and Ross (2003) conducted an examination of vendor (outsourcee) strategy and practices in one long-term successful applications management outsourcing engagement. The analysis indicated that the vendor's efficiency was based on the economic benefits derived from the ability to develop a complementary set of core competencies. Palvia (2003) in a book review of *Turning Lead into Gold: The Demystification of Outsourcing* by Peter Bendor-Samuel [2] summarized the discussion on metrics established to measure performance based on SLA between an outsourcer (client) and an outsourcee (vendor). This book devotes a chapter on SLAs and talks about the importance of having SLAs and the steps needed to establish service levels. Lee, Miranda and Kim (2004) investigated a holistic, configurational approach with the prevailing universalistic or contingency perspectives in exploring the effects of IT outsourcing strategies on outsourcing success. Their findings indicate the superiority of the configurational approach over universalistic and contingency perspectives in explaining outsourcing success.

This paper takes a life-cycle approach to the use of metrics in an outsourcing engagement. We apply the life cycle phases to an outsourcing project which could involve building a product (software application) or providing a service (such as call centers). We define the metrics that ought to be used at each phase of the life cycle of an outsourcing project.

FUNCTIONAL CATEGORIES OF OUTSOURCING METRICS

The whole process of analyzing metrics and selecting them for a particular outsourcing project can be very tedious and time consuming. One approach that has been found to simplify the selection process is to define functional categories, define the metrics of interest in those categories and then select the most appropriate metrics most effective for a particular project. We propose some additional categories to those proposed by Hayes (2004). All together one can use the following categories:

Productivity/Output Related Metrics

This is one of the most important categories associated with an outsourcing project. Examples of metrics in this category are the number of deliverables (functional requirements, design specifications, test plans, software modules, etc.) produced at specified time intervals during the life of the project, volume of work (the level of work effort) needed for each deliverable, the functions included in a software (application) release, number of service calls handled per unit of time, number of maintenance requests per unit of time, etc. The key here is to select simple output related metrics, rather than complex metrics whose implementation could be very costly.

Quality Related Metrics

We define the quality not only to cover defects related metrics but also to include customer satisfaction related metrics. Quality standards (acceptance criteria) have to be defined for each deliverable (documentation and software). By and large, both parties do a good job of defining and measuring defect related metrics. However, this is not true for the customer satisfaction related metrics. They often are poorly defined and become a major source of contention and frustration for the outsourcer and the outsourcee. There are two root causes of this - the lack of metrics to measure the outsourcer's role in communicating end user expectations to the outsourcee and the lack of direct input from the real users of the system. The second problem is a perennial problem and becomes worse in an offshore outsourcing.

Responsiveness Related Metrics

These metrics measure the time taken by the outsourcee to handle a service request from the outsourcer. These include time to acknowledge, time to resolution, time to implement, Average age of the unresolved requests, etc. These metrics create favorable or unfavorable impression about the outsourcee and hence are critical for the continuing success of the outsourcee. On the part of the client, it is very important that the baseline (objectives) values of these metrics are realistic.

Efficiency Related Metrics

The purpose of these metrics is to encourage the outsourcee to achieve higher productivity and then benefit from it to reduce the cost of outsourcing services. While these metrics make sense for the outsourcee, it is not clear how the client benefits from them. In the initial stage of engagements, they should not be even considered. Example of such metrics are cost per support call, number of systems supported per person, percentage time spent on support, etc.

Risk Management Related Metrics

Risk management should start from the moment a company starts exploring an outsourcing option – managing the negative aspects that we discussed in Section 1. The next stage of risk management is in the selection of the outsourcee. The task here is not only to ask for various metrics (ex. security, backup and continuity plans [10] but also to audit (verify) them before the contract is signed. These metrics determine the vulnerability of the whole operation and if properly monitored and managed, protect the outsourcer from unexpected events. Other metrics include frequency of back ups, downtime durations and frequencies, service availability, network infrastructure robustness, disaster recovery scenario metrics, outsourcer key employee turnover, rate of scope creep, etc.

Reporting Related Metrics

After the appropriate metrics from the above categories have been selected, both parties must agree on how these metrics will be reported. Composite metrics derived from individual metrics should be used for reporting purposes by the outsourcer and outsourcee. For example, a balanced scorecard (balancing the volume, quality and effectiveness of the deliverables) could be devised that would weigh the value of individual metrics against the overall objective of the project. The best reporting metrics are actionable, i.e., a clear action can be taken if the metrics are not met. Often at the reporting stage, it is realized that some of the metrics do not contribute to the results and hence should be discontinued.

Incentives/Rewards Related Metrics

For all parties to succeed, it is essential that the achievement of the desired metrics be rewarded and metrics are collected on the incentives and rewards. It said what is measured gets done and what is rewarded gets repeatedly done. Hence, it is important that the achievement of the right kind of metrics get rewarded. Unfortunately, often corporate politics takes over and the right people or right behavior does not always get rewarded.

PROPOSED TOP-DOWN FRAMEWORK FOR OUTSOURCING METRICS

First and foremost rationale for using metrics is to measure the level of success of outsourcing for all three parties to outsourcing – outsourcer, outsourcee and the end customer that pays for the product or service. Let's first define success of an outsourcing project. It means that both the outsourcer and the outsourcee meet their objectives. The objectives of an outsourcer will typically include realizing the promised cost savings while achieving a high level of (end) customer satisfaction. The objectives of an outsourcee will typically include realizing the profit margin while meeting the service level agreements (SLA's) contracted with the outsourcer. Finally, the customer gets a defect free product or a delightful service.

This paper proposes the following top-down framework [Figure 1] for arriving at the appropriate metrics to measure the level of success of an outsourcing project: A Business Strategy Analysis determines what business metrics (i.e., Revenue, Cost, Profit, Return on Investment, time to market, new products introduced, old products discontinued, new customers acquired, etc.) should be focused on. The next analysis is to determine if the outsourcing strategy fits in the business plans of the outsourcer. One of the most common mistakes on the part of companies looking to outsource is that they have not done the homework and thus are not ready for outsourcing. The impact of outsourcing on the organization must be studied in depth. A company must measure what we call pre-outsourcing metrics. These pre-outsourcing metrics include the factors that are believed to be driving the company to use outsourcing. The most critical metrics to know is the current cost of the operations that are candidates for outsourcing.

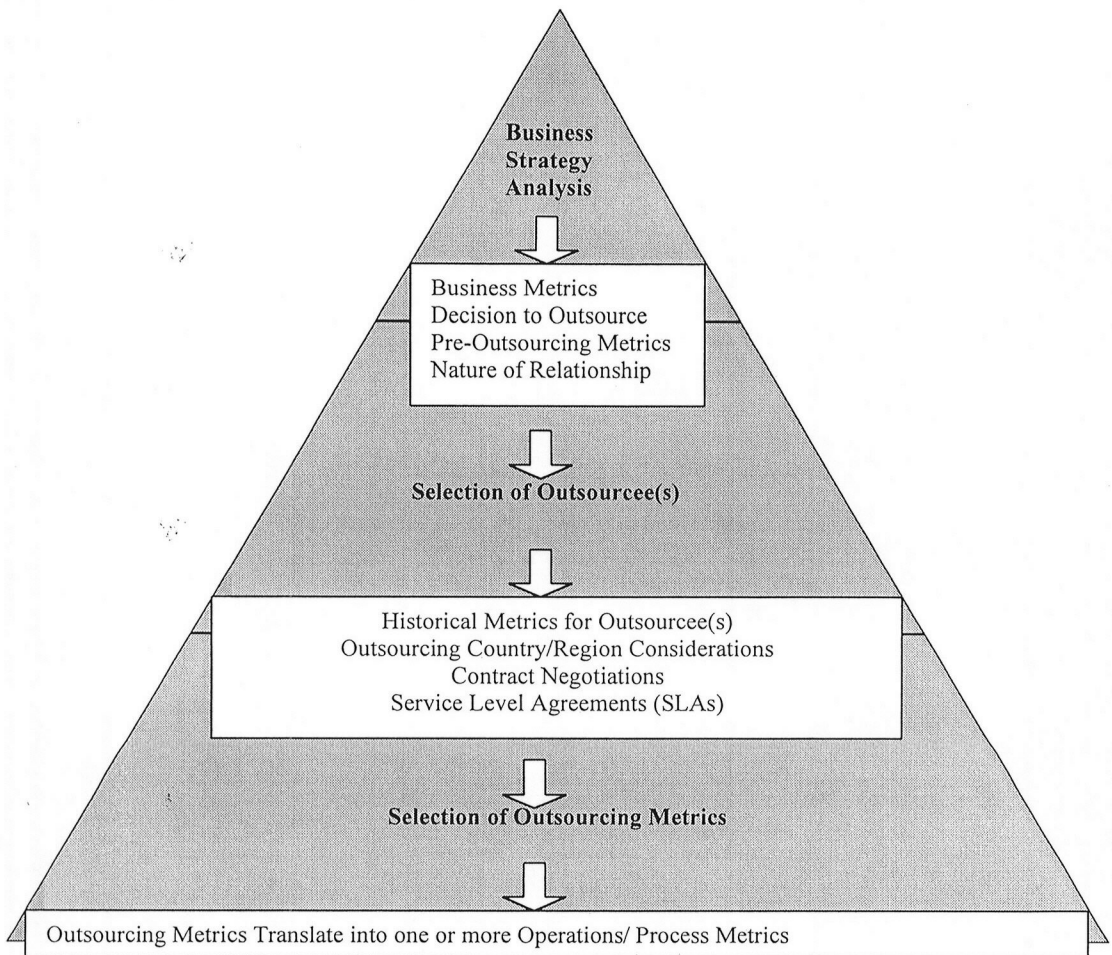


Figure 1: A Top-Down Framework for Outsourcing Metrics

The next step is to quantify what benefits are expected if those operations are outsourced. These may include increased productivity, improved quality, timeliness of application development and reduced costs or increased profits. Then, on the negative side, there are the issues of exporting jobs overseas, low employee morale and loss of good employees. Even though some of these negatives (for example, the low morale of current employees) may not lend to measurement, it is important for a company's success in outsourcing that these (negatives) are managed well; otherwise, in the long run outsourcing will do more harm than good.

Even though outsourcing started mostly as a cost saving measure, it is increasingly becoming a strategic tool for the CEOs. Hence, one of the first analyses to be done is to decide what kind of relationship the

outsourcer is going to have with the outsourcee. Linder (2001) discussed three levels of relationships between outsourcer and outsourcee – conventional, collaborative and transformational. The focus of the conventional relationship is on reducing the cost of the outsourced process. Collaborative relationship is used to “upgrade business processes and to provide flexibility in responding to changing business needs.” Transformational relationship, not yet so common but happening, is used to “create new capabilities and to use them to achieve a clear strategic objective.”

The impact of the type of relationship on metrics is two fold. First, each type of relationship may require different metrics and the second, more importantly, the same metrics get used differently. The source of these differences is the varying level of accountability and controls that need to be in place. So, the outsourcer before deciding on which metrics to use has to determine what kind of relationship it wants with the outsourcee. Typically, the nature of relationship will evolve (from conventional to collaborative to transformational) over time building upon the successes of their previous outsourcing engagements with each other and their business strategies.

Once the decision to use outsourcing has been made along with the desired relationship with the outsourcee, the next step is to select one or more outsourcees. Misra (2003) discussed selection criteria along with the use of the historical metrics that might be available on the potential outsourcees. Examples of the historical metrics are years in business, on-time delivery, quality processes certification (ISO 9001, CMM5), employee turnover, cost overruns, security history, SLA history. A related issue is the suitability of the country where the outsourcee is located (Misra, 2004).

Typically during the contract negotiation, the outsourcer will define the service level agreements (SLAs). The purpose of these SLAs is to ensure that there is no gray area in terms of what is expected from the outsourcee. SLAs are aimed at meeting the service needs of the outsourcee and if applicable, the needs of the end users (customers). In defining the SLAs, it must be ensured that they match with the business needs and metrics. For example, if the customer support is needed only for an 8-5 work day, there is no need to require a 24-hour support. To assess whether the SLAs are being met, SLAs need to be converted into the appropriate metrics (Hayes, 2004). We will call them SLA metrics. To insure the compliance to the SLAs, often the outsourcer will include in the contract the rewards for meeting them and penalties for not meeting them.

Meeting SLA metrics requires a number of different operations and each operation can have one or more processes. These processes have their own metrics. Ultimately it is about how well the processes are managed. Another way - the bottom up view - to look at the relationship of these metrics is that meeting process metrics leads to achieving SLA metrics, which in turn leads to realizing the business metrics.

The most comprehensive framework to examine the IT related operations/processes has been provided by the ITIL (Information Technology Infrastructure Library) and ITSM (Information Technology Service Management) protocols. The ITIL (®) is a series of documents that are used to aid the implementation of a framework for IT Service Management (ITSM). This framework defines how Service Management is applied within specific organizations. Being a framework, it is completely customizable for application within any type of business or organization that has a reliance on IT infrastructure. ®ITIL and is a registered trademark of OGC - the Office of Government Commerce, United Kingdom [22].

According to the ITIL (Information Technology Infrastructure Library) and ITSM (Information Technology Service Management) protocols, there are ten service management processes [25] – configuration management, change management, release management, incident management, problem management, service desk, service level management, capacity management, financial management and

availability management. Details of each of the metrics for each of these processes are defined in ITIL/ITSM. All these processes require service level agreements (SLAs) consisting of performance metrics that must be met. Not all of these ten processes will necessarily be part of an outsourcing contract. At some appropriate stage, an analysis should be done to determine which of these processes apply followed by a selection of relevant metrics.

OUTSOURCING METRICS IN PRACTICE: THE CASE OF TELCORDIA TECHNOLOGIES

Misra, Shnayder and Amin (2003) discussed how Telcordia Technologies (Bell Communications Research was renamed Telcordia in 1999 after RBOCs sold it to SAIC) went about outsourcing some phases of the system development life cycle of two network management systems in order to achieve both short term tactical goals (lower costs) as well as the long term strategic goals (shorter development time, access to superior skills). The outsourcing involved three offshore companies – two in Russia and one in India. The paper discussed the driving forces for offshore outsourcing, the selection process of outsourcing vendors and the infrastructure (communication links, hardware, software and organizational structure) that was needed to insure that the outsourced work met Telcordia's internal quality requirements, which are derived from CMM5 and ISO9001 certifications.

It should be pointed out that Bell Communications Research (Bellcore) was formed in 1984 at the time of the Bell System divestiture to provide professional services and to develop application software systems (Operations Support Systems) for the Regional Bell Operating Companies (RBOCs), all seven of them at the time. To use the outsourcing terms, RBOCs were Client companies (outsourcers) and Bellcore was the service provider (outsourcee). Since Bellcore was owned by the RBOCs, it would be more appropriate to call Bellcore RBOCs' ODC (Outsourced Development Center). Not surprisingly, many of the issues encountered in outsourcing are similar to those Bellcore and RBOCs faced.

The focus of this section is on how Telcordia has used various metrics to manage its outsourced work. As part of using outsourcing to achieve its business goals, Telcordia outsources only selective pieces. This is very similar to what Lacity and Willcocks (1998) identified in their work as the first best practice, i.e., selective outsourcing decisions had higher success rates than total outsourcing or total insourcing decisions. However, Telcordia has reversed itself on the second best practice, i.e., senior executives and managers who made decisions together had higher success rates than either stakeholder group acting alone. Until a year ago, there was a separate outsourcing senior manager that coordinated all outsourcing work and for various reasons this model did not succeed; now, it is left to individual departments to make their own decisions. It is to be seen if the new approach will be more successful.

As part of service contracts with Telcordia for the maintenance of the software systems, RBOCs have defined service level agreements (SLAs) for Telcordia to meet. As part of these SLAs, Telcordia is required to have a customer service center open 24 hours a day and 7 days a week. The reason for this SLA is the mission critical operations support systems (service assurance systems) that run around the clock. The customer service center has a 24 hour hot line where a live person must answer the phone call from the RBOC personnel who are managing these systems in the field (spread all over the USA). RBOCs can either call Telcordia or enter the trouble report directly into the trouble record system (a software system dedicated just to this function).

Other SLAs that have been defined are related to the turnaround time taken to resolve a customer trouble report (TR). Depending on the nature of the trouble (crash causing, service affecting or just a nuisance), the turnaround time varies. In order to execute these SLAs, there is a process in place to classify the trouble reports into severity 1 (most serious), severity 2 (next most serious) and severity 3 (least serious but needed

to be done). The specific criteria for each of these severities have been defined and agreed upon with RBOCs. The first SLA regarding the trouble reports that Telcordia has to meet is the response time (the time taken to acknowledge the submitted trouble report). The range for this SLA is from the average of 15 minutes (for Severity 1 TR) to 3 hours (for Severity 2 TR). Another SLA is for problem identification. The average time for identifying the problem (root cause) is 12 hours. Another SLA has to do with the system restoration time. If a system is down, it has to be brought back in operation within 24 hours. If a problem requires a software release, that must be done within 15 days. These are just a few examples of many SLAs that Telcordia has to meet for RBOCs.

Notice that these SLAs are defined in terms of average time. In order to meet these averages, Telcordia has to measure actual time (metrics) for each trouble report for each of these categories. Then, a system calculates the actual (achieved) SLAs and compares them to the target values (objectives). If these SLAs are not met, there are penalties.

The other types of metrics that Telcordia uses have to do with the quality of the software that either it develops in-house or outsources. There is a direct impact of these metrics on the trouble reports in the field. Telcordia is an ISO 9001 and CMM5 company. It has some very rigorous quality metrics and process checks in place throughout the software development life cycle phases – planning, requirements formulation, design, development, product testing, deployment and maintenance. Examples of metrics for each of these phases are given below in Table 2.

Phases	Metrics
Planning	The proposal win rate, Over-price margin
Requirements Formulation	The number of changed milestones, the number of change controls, and the number of defects in the requirements.
Design	The number of issues in design reviews
Development	Unit testing results (# test executed), Multi-unit testing (# test executed)
System (Product) Testing	# test executed and passed, # test passed first time, Defect tracking charts (graphs), Defects being fixed, defect fixed, defects in test
Deployment, and Maintenance	Cutover time, surprises, # severity 1, #severity 2
Overall Performance/Productivity	The number of new lines of code The number of changed lines of code

Table 2: Examples of Metrics for a Software Development Project

Telcordia requires the outsourcee to meet the same metrics and SLAs that it meets for its clients. Telcordia's SLAs and metrics are keyed to its business goals. Recently, when RBOCs wanted Telcordia to lower the maintenance cost, Telcordia negotiated a new set of SLAs that were relaxed compared to the old ones and can be achieved at lower costs.

SELECTION OF OUTSOURCING METRICS: BEST PRACTICES

If companies are not careful they can waste so much effort, time and money in the quagmire of collecting metrics and then essentially ignoring them. A classical example is the RBOCs' collection of performance data that each network element (switches, multiplexers, digital loop carriers, etc.) every 15 minutes. The huge amount of data just stays in the databases and eventually is deleted after months of collection. The trade literature [Linder, Sawyer and Hartley (2001) and Hayes (2004)] discusses some of the best practices used by practitioners in selecting metrics that produce results. In selecting the metrics, we invoke a slight variation of the KISS principle from its commonly known version of Keep It Simple and Stupid to Keep It Simple and Strategic. While adding some new practices to those proposed by Linder, Sawyer and Hartley (2001) and Hayes (2004) and modifying some of them, we present the following comprehensive list:

1. Choose metrics that lead to the desired behavior by both outsourcer and Outsourcee.

Each party should accept and understand the motives of the other party. The outsourcee wants to maximize profit while meeting the metrics that are part of service level agreements. The outsourcer wants to reduce the cost while ensuring that the outsourcee meets all the commitments. In a fixed cost contract, it is counterproductive for the outsourcer to keep changing the requirements or adding new requirements. In a time and material contract, it is counterproductive to put extra hours by the outsourcee so that more money can be made. What should be tracked (and rewarded) is to come within the budget. The best counter example is keeping track of productivity by the number of lines of code written. It can result into a lot of code with a lot of quality issues. This kind of metrics promotes undesirable behavior.

2. Choose metrics that are within the outsourcee's control.

Each metrics for which the outsourcee is responsible must be under its (outsourcee's) full control. All external variables associated with metrics but not under outsourcee's control must be removed from the metrics. For example, the time in the mail should be taken out of the metrics that measures the time taken in receiving a deliverable.

3. Choose metrics that the outsourcer must meet so that the outsourcee can meet its metrics.

If outsourcee's ability to complete the work depends on certain actions by the outsourcer, these actions should be part of the metrics collected. The lack of these metrics becomes a source of frustration and results in missing the customer expectations. Often, Telcordia was held responsible for missing the customer's expectation even though the customers (RBOCs) did not provide the necessary feedback on the specifications that were sent to them (RBOCs) for comments. There were no metrics in place to keep track of the RBOCs responsiveness.

4. Choose metrics that are easily (preferably automatically) collected.

Collection of the metrics should not become an expensive project in itself. Wherever possible, commercially available automatic tools should be used to collect the metrics. This is where the maturity of the internal (development) processes of the outsourcee becomes very important.

5. *Choose fewer metrics with higher stakes and select them early.*

Often there is a tendency on the part of an outsourcer to include a lot of metrics so that it can achieve a higher degree of control over the outsourcee. In general, control metrics do not produce desired results; motivational metrics do. A value analysis of metrics should be performed to determine which metrics contributes most to the business objectives (metrics). Also, it is not recommended to use metrics that generate a large amount of data. Such data does not get analyzed, hence is ignored. Such is the case with the performance related data collected by the telecom equipment (switches and multiplexers). It's so voluminous that RBOCs often turn this capability off.

6. *Choose metrics that are evaluated on objective criteria rather than subjective.*

This has less to do with the metrics and more to do with base lining the requirement or setting a benchmark for the metrics. If a requirement cannot be measured, it cannot be part of a metrics. Subjective (meaning open to different interpretation by different people) metrics result in disagreement on whether the metrics was met or not. The metric should not say, for example, call the customer back as soon as possible. Instead, it should say call the customer within, say, 15 minutes.

7. *Choose metrics that are aligned with each other and with business metrics.*

Sometimes achieving one metrics undermines achieving another. And, both may have nothing to do with achieving the business metrics. It has been observed that not enough resources are given for achieving an alignment. People are more concerned about achieving their own functional metrics (tester for getting all trouble reports closed, release manager for shipping the software on time, etc.) without much understanding of the business implications of meeting their metrics. Someone who understands the big picture needs to do this analysis and remove the metrics that are not aligned.

8. *Set realistic (achievable) baseline values to selected metrics.*

Once the metrics have been elected and defined, the last crucial step for their correct use is to set their baseline (objectives) values that are reasonably achievable. This requires historical data analysis and knowledge of technology. The outsourcing contract and SLAs should be flexible to allow such changes.

It is recommended that the actual process of selection should be as follows:

- Starting with all the categories of metrics and applying the top-down framework, select the candidate metrics.
- Then, apply the above best practices to accept (those meeting these criteria) and to reject (those not meeting these criteria).
- At the end of this exercise, one will have an implementable set of metrics.

Once the right mix of metrics along with their baseline values have been selected, the next step is to implement them. With the best of the intentions of all parties, the success of implementation (Licker, 2004) is not guaranteed. Special efforts are needed to reduce the surprises. In practice, implementation has three dimensions – processes, technology and people. New processes and existing processes need to be defined or modified to include the impact of metrics. Telcordia Technologies had to re-write most of its processes to include the metrics that were required for ISO 9001 and CMM5 certifications.

New processes have to be defined for handling the data collected to generate the metrics. Processes should be in place for measuring the metrics and the auto-reporting should be done as much as possible. The technology aspect deals with the tools (software mostly) that need to be deployed for the collection of metrics and later for the analysis. The people aspect is more challenging. The key employees and managers of both companies must be trained and educated on the importance of achieving the metrics along with the incentives associated with those metrics. The most challenging people aspect is to achieve acceptance of the metrics. The last step here for both parties is to put mechanism in place so that the reporting metrics could be reported on a regular basis and acted upon. These actions include corrective actions to take care of the problems (quality, output, etc.) but also should include rewarding and recognizing employees for achieving the metrics.

IMPLICATIONS FOR PRACTITIONERS AND RESEARCHERS

This paper has presented a strong case for the use of metrics in establishing the level of success of an outsourcing engagement related to information technology (IT) services or IT enabled services (back office business processes). It proposes that the success of an outsourcing engagement should mean the achieving of goals of all three parties - the company that outsources the work (outsourcer), company that is going to perform the outsourced work (outsourcee) and the end user who uses the product or is a beneficiary of the service. With the use of appropriate metrics, the outsourcer and the outsourcee can mutually position themselves for success and ensure that the end user needs are met. This paper presents a framework for outsourcing metrics, then goes on to present the best practices that should be applied in selecting metrics. While making a case of the proper implementation of the selected metrics along with an appropriate system of incentives and rewards, this paper concludes with a discussion of the need for composite reporting metrics agreed upon by both outsourcer and outsourcee.

A company looking to outsource some of its operations must collect pre-outsourcing metrics (cost of doing the work in-house, benefits of outsourcing, etc.), then decide on what kind of relationship (conventional, collaborative and transformational) its business strategy warrants with the company (outsourcee) that is going to perform the outsourced work. Next, the outsourcer has to select an outsourcee by evaluating the historical metrics available for the outsourcee(s) and weighing outsourcing country/regional factors. This is followed by contract negotiations that should include service level agreements (SLAs). The SLAs, then, have to be converted into a set of metrics that could be measured. Both parties have to decide what metrics each will use to insure success. This is done using the best practices of metrics selection. Once a set of metrics have been selected, the next step is to implement them along with the ways of measuring those metrics. Finally, an incentive system has to be devised and implemented so that the employees of both companies (outsourcee and outsourcer) are motivated to the desired behavior.

As stated earlier in this paper, a majority of the literature available on this topic comes from trade magazines and journals. There are claims and counterclaims about which metrics work and which do not. Ideally, researchers and practitioners should work together to verify such claims. Unfortunately, most companies consider their data proprietary and are very reluctant to share them. The most natural extension of this work is to apply the top-down metrics framework presented in this paper to various segments of IT industry (application development, call centers, data centers) and develop recommended metrics for each of these segments. The framework can also be applied to the back office business processes such as finance, accounting, and human resources management processes.

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