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IT Delivery Capabilities: Assessment and Performance Measurement of Selected Indian IT & ITeS organizations*.

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Abstract:

In the globally competitive environment, the organizations are forced to seek newer and faster solutions to remain competitive by removing the cost overrun and time overrun. In this backdrop, outsourcing has emerged to be a critical business strategy employed by many companies successfully for their long-term survival and growth. Growing number of firms outsource more of their professional services across geographic and temporal boundaries. India has emerged as an attractive destination to the global companies. Because of its competitive position, the country has gained a unique position in global IT outsourcing. However, one needs to examine the long-term ramifications of outsourcing on business and the society at large. This research paper presents a survey-based analysis of the current trend for private sector outsourcing needs and the competitive advantage for Indian IT corporate. The study finally attempts to evaluate the strategic move in the context of comparative advantages for cost savings, accessing to new skill sets, and access to cutting-edge technology.

Keywords: Competitive advantage, Global outsourcing, IT delivery capability, Indian IT & ITeS organizations, Offshore Sourcing, Performance Measurement.

1. Introduction

Outsourcing, particularly Information Technology (IT) outsourcing receives great attention in order to build competitive edge. A number of the studies looked at outsourcing from a socioeconomic perspective or management perspective. However, the impact of global outsourcing on organizations that want to establish an IT delivery capability has not yet been addressed systematically. Examples of such organizations include IT departments, which serve one or more subsidiaries of an enterprise, consulting companies providing IT services, and technology companies where IT is embedded as part of a core product or service. There is a major impact of global outsourcing on Indian IT companies. There are various

parameters involved, based on outsourcing is measures by the various Indian IT organizations. Initially outsourcing started with the functions in which the company didn't have core competence and were generally supporting functions. However as per the study now a days outsourcing is expanding its horizon beyond the limits and various Indian IT companies have started outsourcing its major activities too. Especially in the current scenario, services sectors like finance, insurance, health care is predominant in this outsourcing activity. Presently proper outsourcing is a major profit making activity for Indian IT & IT service companies existing in India as like the global companies. Companies like Infosys, Satyam, TCS, Wipro, etc. have made India the hottest destination in IT outsourcing by acquiring most of the IT outsourcing contracts in India.

2. Research Methodology

This research has aimed at identifying various parameters concerning to out sourcing. It is attempted to discover the critical parameters from the identified parameters. A structured questionnaire has been prepared based on the critical parameters, using of Likert's five points scale, to measure the weightage

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responses from the professional experts. The questionnaire was circulated to collect responses from various professionals of IT & ITeS domain. From the feedback of questionnaire, various matrices have been developed based on the identified critical parameters. Finally, various matrices for outsourcing have been derived based on various parameters involved and identified in the outsourcing process.

From literature survey and discussion with the various professionals of IT & IT Service industry, different parameters have been identified using grounded theory of analysis. From the identified parameters and their contribution / effects on the performance of an organization in various processes/operations, a questionnaire was prepared and circulated among the various professionals identified in the respective field. To identify the critical success factors from the identified factors based on the discussion with the professionals, the final parameters have been identified as having the maximum contribution in the performance measurement of IT & IT Enabled Service Industry. The questionnaire was distributed among 1) Senior IT Management Professionals 2) Project Managers 3) Performance analyzer of various organization 4) Middle/high level of manager 5) Performance management professionals.

The questionnaire was circulated among the 400 IT & ITeS professionals across India along with IT & ITeS verticals. The selection is based on the criterion that IT organizations has a focus on IT product development whose major revenue comes from services using IT. From 400 professionals across the country, 190 feed backs were received, out of which only 134 responses were found qualified for our analysis.

Based on the study of the existing literature and industry feed back, fifteen critical parameters have been identified where Indian IT & IT enabled service industry feels their outsourcing needs. These parameters have been derived based on grounded theory of analysis, previous literature review and discussions with various professionals in the IT industry. On the basis of these parameters a structured questionnaire has been prepared and circulated

among various professionals in IT sector in India.

From the feedback of various people mentioned above only 90% of the above filled in questionnaires were considered for the study purpose. 134 filled in questionnaires found valid for analysis according to the above criteria. The weightage scale was taken between 1 and 5. Depending upon the respondent's weightage, the rating of the parameters was derived.

2.1 Outsourcing: The Concept in Global & Indian Context

A prediction in the Forrester Research report was, "3.3 million jobs worldwide will be lost over the next 15 years due to outsourcing in the IT and ITEs (IT-enabled services) sectors. But expected job losses in that period will be compensated by opening of new job opportunities for several million project managers in U.S." IT positions enhance the value chain to avoid extinction. Various reports suggest that there's already a shortage of intellectual capital that can manage projects internally. Down sizing the cost is one of the dominant reasons that drive outsourcing. From the previous study it has been observed that outsourcing to countries with lower-cost wages allows firms to make significant cost savings, it is expected that off-shore outsourcing is likely to experience steady growth in next few years. This statement has been critically analyzed in this study in two major Indian services

Figure 1: *Indian IT consultancy service model*

Discussing with the various experts it has been observed that the major Indian IT & ITeS Company's outsourcing concept is based on four-stage maturity model. (Figure 1).

1. Bystander (no off-shore outsourcing);
2. Pilot/Experimenters;

3. Cost Focus; and

4. Strategic Consumers of off-shore capabilities. The Gartner's Hype Cycle model suggests that in the pilot phase of the model a limited number of projects be executed to demonstrate viability. In the ramp-up phase, a large number of projects can be moved off-shore, maintaining an on-shore to off-shore resource ratio of 1:4. In the stabilization phase, the ratio of on-shore resources to offshore resources can be increased to 1:8 to attain maximum cost benefits. The maturity phase is the culmination of the stabilization phase where the use of offshore resources in projects is seamlessly built into the enterprise's governance model.

It has been observed from our study that major Indian consultancy sourcing life cycle which is also a 4 step iterative cycle starting from defining a sourcing strategy to evaluation and selection of the best to the development of contract and finally using the management of Sourcing Management technique.

Figure 2: Model for sourcing life cycle according to Indian corporate perspective
Source: Dataquest July 2007

The application of the above model has been observed in case of Airtel, that evaluating IBM's model in Indian scenario.

It has been observed from the study that in a dynamic market the scope of the services includes:

- Outsourced services across infrastructure, applications and business process
- Delivery models for outsourced services
- Consulting and systems integration services for specific technologies and applications

2.2 IT Sourcing Types in Indian Context

The scope of IT functions varies from simple back office systems to fully integrated inter-enterprise systems (in which the firm's IT is fully integrated across supply and customer interface channels), the common functions of IT can be broadly classified under four groups as shown:

a. All IT Functions	c. IT Applications
b. IT Maintenance	d. IT Infrastructure

a. All IT Functions: Complete IT outsourcing including developing and maintaining of proprietary applications/products, customer service centers, and IT infrastructure.

b. Applications: Development of IT applications, including packaged commercially available software, customization services, and developing custom applications.

c. Maintenance: Maintenance of all types of legacy applications.

d. IT Infrastructure: It includes data centers, end user PCs, core IT services such as E-mail, Internet, portals to manage data and documents, connecting networks (LANs, WANs), information security, helpdesk, data backups, and disaster recovery.

2.3 Development of Framework for Assessing Global IT Sourcing

It has been observed that for Indian companies those provide software solutions, the most common cited model is CMM. Despite the popularity of CMM (a process framework model) and ISO 9000-3, and other standards that primarily tries to assess the product quality and there is no single framework for assessing the delivery capability of IT organizations from a technology/architecture perspective.

Table 1: Outsourcing as % of Revenue, Trend of Indian Companies. (Revenue more than Rs. 1 Cr)

Areas of Outsourcing	2002 In %	2003 In %	2004 In %	2005 In %	2006 In %	2007 In %
Finance & Administration	7	5	5	4	4	5
Application System	N/A	4	3	4	4	3
Application Maintenance	16	19	17	18	19	15
Application development	15	20	18	15	19	20
Help desk	8	5	6	5	5	6
Data networking system	8	8	7	11	13	11
Voice networking system	7	6	7	7	6	6
Desktop/lan Server	16	14	11	12	11	14
Data center	17	16	18	16	15	14
Others	6	3	9	8	4	6

Source: Business World June '07

IT Outsourcing service provider's main role is managing and arranging hardware, software and knowledge capital. The areas where IT outsourcing is being done regularly include infrastructure, regular IT operations, training and education. From the above table it's clear that the major areas being outsourced are Application development, Application maintenance, monitoring and support. The next major areas are Data Center followed by Desktop and Data Networking system.

Figure 3: Framework for assessing the IT-delivery capability

Based on various parameters, a simple framework for assessing the IT delivery capability has been developed

for an enterprise and provides an assessment of Global Outsourcing using this framework from Indian perspective. However, this research is anecdotal and has not been subjected to rigorous testing.

A comprehensive framework for addressing the entire suite of IT capabilities is shown in Figure 3. This framework is not a framework for classifying Indian IT but a framework for assessing the IT-delivery capability based on 3 major components of People, Process & Products & Services. The framework anchors on the three fundamental dimensions, or perspectives, on IT service delivery:

A. People B. Process C. Products & Services

From the data & feedback collected previously, it has been observed that various corporate professionals try to develop a framework that reflects the true picture of outsourcing based on these 3 parameters. The framework presented is a simplified view of the reality. However, it provides a pragmatic perspective for organizations that deliver IT solutions to assess the benefits and risks of global outsourcing. In this paper global outsourcing is assessed from the three perspectives namely people, process, products and services. Global outsourcing has impact on the Indian IT industries in a different way. For example, the recent ban of off-shore outsourcing by organizations using federal project funds significantly impacted IT that caters to the public sector. The risk of losing intellectual property is far greater in product companies that develop software and companies that deploy proprietary algorithms. Infrastructure services impacted primarily by low cost call-centers, whereas software consulting and developments impacted mostly on sourcing and process perspectives.

A. People

It has been observed that human resources constitute the backbone for IT delivery. The major impact of

global outsourcing has been on people. In-source, out-source or off-source (using off-shore resources) are three options available before organizations. Traditional benefits of outsourcing from a people perspective include mixing and matching specific technology and domain skills from a larger pool. IT in India anticipated and planned for the benefits of using offshore resources to stay competitive with offshore firms. IT benefited from this pool as evidenced by larger outsourcers (such as IBM and EDS) who can provide significant offshore sourcing through their wholly owned and partnered off-shore firms.

We have classified IT using offshore resources into three groups:

- Those who do it themselves (Managed Development Centers),
- Those who contract with off-shore companies (Offshore Outsourced Vendors), and
- Those firms using offshore resources on site (On-shore Outsourcing).

A Comparative Analysis of all three can be shown as:

Table 2: Various characteristics of onshore offshore services analyzed from Indian IT Companies.

Characteristics	Managed Development Centers	Off – shore Outsourced Vendors	On-shore Outsourcing
Cost	Lowest	In between	Highest (but cheaper than US based outsourcers)
Risk	Highest	Moderate	Lowest
Implementation Time	Longest 9 months to 18 months	Fastest – under 3 Months	Depends on the political situation, Visa availability – up to 6 months
Governance	Special expertise in offshore culture. Regulations, sourcing	Managing off-shore contacts	Traditional vendor management

From the previous observations it has been found that IT using off-shore resources started by using them onshore (in the mid 1970s and 1980s), evolved to using project-based models using off-shore vendors or adopting the managed development centers concept.

Figure 4: IT Solutions provided by Indian IT Companies in recent era and their cost competitiveness

Costs are the lowest when IT companies establish their own subsidiaries and manage the resources. These subsidiaries are labeled as Managed Development Centers in figure 4. The total costs per hour for employees of an MDC in India for example varied from \$5 per hour to \$15 per hour.

IT company, who uses off-shore vendors about 25% to 100% more (\$6.25 to \$30/hour) than the cost of operating at MDCs. On-shore outsourcing, which is the most expensive of the three options, costs about 50% to 100% more than outsourcing to offshore companies (i.e., up to \$60/hour).

India-based IT consulting companies who provide IT solutions use the three models shown in Figure 5. In addition, they also use Joint Ventures with established offshore firms, Say for example, the joint venture between Tata-Unisys and HCL-Perot Systems.

Deciding upon the outsourcing strategy, IT needs to address not only domain skills but also business and communication skills. India far outshines other countries primarily because of their emphasis in communication skills. While Global Outsourcing provides a rich source of technical architects and those who make technology work, these types of people are only a few of those required to deliver IT products or services. Business analysts and business-IT relationship management are skills that are not as readily available through outsourcers, particularly, off-shore outsourcers.

Based upon the above concept developed, the questionnaire was circulated among the four hundred

professionals across India along with IT & ITeS verticals. Here during our analysis, IT organizations represent the organizations focus on IT product development & ITeS organizations represent whose major revenue comes from services using IT. From 400 professionals across the country, 190 feed backs were received, out of which only 134 responses were found qualified for our analysis. Feed back results have been shown in different tables along with the various parameters.

Study from the existing literature & industry feed backs fifteen critical parameters have been identified where Indian IT & IT enabled service industry feels their outsourcing needs. These parameters have been derived based on grounded theory of analysis, previous literature review & discussions with various professionals in the IT industry. On the basis of these parameters a structured questionnaire has been prepared and circulated among various professionals in IT sector in India. The feed back from the professionals has been represented in tabular form.

Table 3: Various responses received from the questionnaire against various critical parameters

Sl No	Critical Parameters for Performance Management	Not Good (1)	Better (2)	Well (3)	Good (4)	Very Good (5)
1.	Cost reduction in HR	0	2	20	90	16
2.	Cost reduction in PLC	2	4	32	70	20
3.	Organizational Information Flow	2	6	64	38	20
4.	Customer Satisfaction	2	2	12	74	38
5.	Co-ordination in operation	2	10	74	28	16
6.	Aids of diversification	2	4	88	22	12
7.	Integration of Supplier, customer, employees	4	2	12	100	10
8.	Cost of communication	4	4	26	50	44
9.	Communication Lag	2	6	72	44	6
10.	Hierarchy System	4	2	10	104	10
11.	Cost of product delivery	2	20	72	30	4
12.	Unit linkage	4	6	64	34	20
13.	Market share impact	2	0	10	100	18
14.	Employee Return	8	12	80	16	10
15.	Knowledge Sharing	5	13	78	18	12

Now these weight ages have several contribution levels based on the feed back from the professionals which has been represented in the *Table 4*. Our study shows that there are maximum intensity of the weight age received in the weight age region of 3 & 4. The same characteristics are also visible in the previous table where we have seen the response weight age for the most important parameters were maximum in the weight age region of 3 & 4.

We have also derived the ratings of those parameters based on the professionals feed back. This also shows the criticality of those parameters in case of job outsourcing in Indian context.

Table 4: Contribution of each weight age in tabular form.

Sl No	Critical Parameters for Performance Management	Contribution Weight 1	Contribution Weight 2	Contribution Weight 3	Contribution Weight 4	Contribution Weight 5
1.	Cost reduction in HR	0	1	4	72	14
2.	Cost reduction in PLC	0	2	6	56	20
3.	Organizational Information Flow	0	2	6	30	20
4.	Customer Satisfaction	0	1	2	59	38
5.	Co-ordination in operation	0	4	15	22	16
6.	Aids of diversification	0	1	18	18	12
7.	Integration of Supplier, customer, employees	1	1	2	80	10
8.	Cost of communication	0	2	5	40	44
9.	Communication Lag	0	2	14	35	6
10.	Hierarchy System	1	1	2	83	10
11.	Cost of product delivery	0	8	14	24	4
12.	Unit linkage	0	2	13	27	20
13.	Market share impact	0	0	1	80	18
14.	Employee Return	0	1	16	5	0
15.	Knowledge Sharing	0	2	16	6	2

The derived rating that has been found from the calculation has been mentioned below.

Table 5: Ascending order of the critical factors as per calculated rating.

Order No	Old No.	Critical parameter	Rating	Remarks
1.	4.	Customer Satisfaction	3.818	Highest impact
2.	13.	Market Share Impact	3.758	Higher impact
3.	10.	Hierarchy System	3.667	Higher impact
4.	7.	Integration of Supplier, customer, employees	3.561	Higher impact
5.	1.	Cost Reduction in HR	3.439	Higher impact
6.	8.	Cost of Communication	3.439	Higher impact
7.	2.	Cost Reduction in PLC	3.149	Higher impact
8.	12.	Unit Linkage	2.385	Medium impact
9.	9.	Communication Lag	2.246	Medium impact
10.	3.	Organizational Information Flow	2.194	Medium impact
11.	5.	Co-ordination in Operation	2.164	Medium impact
12.	11.	Cost of Product Delivery	1.909	Lower Impact
13.	6.	Aids of Diversification	1.806	Lower Impact
14.	15.	Knowledge Sharing	0.985	Lower Impact
15.	14.	Employee Return	0.831	Lowest Impact

Presently our study has revealed that Customer satisfaction has been the most important driver for outsourcing in case of private IT & IT service organizations. To improve the market share, organizations outsource their non-core activities to other organizations. Similarly there are some other parameters which are involved in this activity e.g. integration of Supplier, customer, employees through enterprise resource planning software's like SAP, JD Edwards, BAAN etc. Specially to integrate various customers there are many CRM packages are available in Indian context.

Apart from that there are various other parameters for outsourcing, e.g., cost reduction in HR, communication within or out side the organization. Similarly to reduce the cost of product, increase the employee return, information flow within or out side the necessary part of the value chain out sourcing is being done by the organizations. Another area of concern is the challenge of higher attrition rate experienced by offshore firms. As offshore outsourcing increases, the demand for IT people increases in the offshore markets. One of the artifacts of this increased demand is higher attrition, as newer entrants lure away IT specialists from existing firms.

Finally, Indian IT companies have started to realize the fact that evolving skill set cannot be monolithic. In the early stages of IT, a person could start and retire with the same skill set (systems programmer on IBM mainframes). As the PCs came into being, the technology cycle became shorter. With the advent of Internet, web services, packaged applications that change frequently, and a constantly changing hardware environment, the technology life cycles have become shorter. For example, ABAP, the language of the SAP software and the backbone of thousands of jobs, is on the verge of becoming extinct with Web services. Imagine the impact, if Linux replaces Microsoft and Sun Solaris as the server operating system of choice. Shorter evolution cycles imply the need to develop expertise in multiple domains.

Figure 5: Model tree of selective outsourcing done by Indian IT Companies portfolio wise.

Developing these abilities must be taken care of while developing the Global Outsourcing strategy. Global outsourcing can help IT offloads technical work while developing these multiple skill sets. However, if they merely transfer back the cost savings realized to their customers or shareholders without making investments in employee development and developing new technologies, then the long-term impact can be detrimental.

A. Process

IT life cycle addresses the development and management of IT for the enterprise within the framework of the Enterprise's Governance Model. Figure 5 exhibits the internal governance model with dividing in different portfolios.

From the previous study & statistics we have seen selective outsourcing is generally more successful than total outsourcing. IT typically out sources the applications and support side (call-centers). Seldom do they outsource the IT infrastructure except one or two exceptions like Bharti Cellular Limited. According to Indian context the most common form of outsourcing is development and management of IT applications in Indian IT & Service sector.

Most global outsourcers use CMM as the reference point identifying their process maturity in developing IT applications. CMM while certainly a model that helps improve software quality suffers from an intrinsic issue of requiring a clear blue- print of the need not easily accomplished with offshore resources because of the lack of constant interaction between developers and users. Requirements volatility is identified as the dominant cause of project delays and cost overruns software life cycle models essentially center around seven phases:

1. Requirements (the what)/Project Planning	2. Design (the how)/Project Blueprint
3. Implementation (Code Development)	4. Verification and Validation
5. Deployment	6. Maintenance and
7. Retirement	

Traditional waterfall models, prototyping models, and risk reduction techniques such as the spiral model are the popular life cycle methodologies. These models attempt to reduce the cost of re-work; however, they are not able to address the two major challenges in implementing software:

- Lack of true metrics: IT process metrics are fractured and no uniform mechanism truly assesses the delivery quality. Metrics play a large role in estimating the true costs or value of IT investments. Since costs play a significant role in off shoring, the proper assessment of true costs is imperative. Cost estimation techniques when using offshore resources are no different than traditional estimation techniques when using algorithmic models such as COCOMO or function points. Time pressure constrains the estimator's ability to understand the scope of the task. Task characteristics include complexity, volatility, number of functions, size of data, and percentage of reuse. In addition to these costs, offshore outsourcing entails additional overhead. Furthermore, internal resistance and building consensus add additional indirect costs not usually taken into account during the early stages of off shoring. Five macro-cost factors that affect project estimation when outsourcing have been identified in Table 6. These macro factors are grouped into three cost-estimation classes: Algorithmic, Fuzzy and Economic.

Table 6: Some of the macro cost factors effecting project estimation during outsourcing in Indian Industry.

Cost Factor	Estimation Class (Nature)	Estimation Technique
Size	Algorithmic	Function Points or Analogical Models developed for each project those are part of the portfolio
Architecture	Fuzzy	Depends on off-shore company skill sets – needs to be developed during early stage of engagement
Duration/Type of Relationship	Economic	Market comparisons with multiple offshore vendors.
Outsourcing Complexity	Algorithmic	IT Provider and Outsourcer 'relationship specific matrices' – needs to be developed during early stages of engagement. If the outsourcing includes multiple projects, then matrices for each type of project need to be developed.
Governance	Fuzzy	Company specific costs – varies with each engagement and best address via a strong Service – Level Agreement (SLA)

1. Algorithmic: Project estimation using algorithmic class can be independently estimated using existing cost estimation models or metrics that can be developed specific to the off-shore engagement;
2. Fuzzy: Fuzzy class estimates can only be obtained using a combination of algorithmic models and historical estimates and
3. Economic: Economic factors based market-

models (depends on the market conditions). In this case, the best way to arrive at costs is to use RFP-Bids from multiple vendors.

Team-based approaches to cost estimation using analogical data produces far better estimates than algorithmic techniques. This result implies that enterprises venturing into offshore outsourcing need to develop an experience base.

A. Products & Services

Products & services are the major important deliverable part of various IT & ITeS organizations. Products may be in terms of software or some other IT products or consulting reports. Based on the critical parameters, two dimensions have been considered for the analysis for decision on strategic outsourcing, according to the size & scope respectively.

Here for analysis purpose previously mentioned those fifteen parameters have been divided into four-project management perspective, Cost, Human Resource, Organization & Strategic perspective.

Now considering this four perspectives into two dimensional matrixes, Size & Scope for Infrastructure, Customization & Importance of IP for Application of outsourcing respectively can be strategically represented based on received feed back as below considering two major components of products & services, i.e. Infrastructure & Application services.

Figure 6: Outsourcing in Indian perspective considering infrastructure services.

Infrastructure services: Infrastructure services, in turn, can be classified based on size and scope. Global outsourcing significantly impacts on IT Infrastructure

and supporting services. Lower costs coupled with advances in call-center technology reshaped the call-center industry. For example, many airlines, banks usually will choose as outsourcing element of handling call if the scope of work is less & size of work (volume of call receive etc.) is high.

Four broad classes are identified in figure 6. From simple Helpdesk (quadrant A) to fully managed services (quadrant D), IT takes advantage of Global Outsourcing to stay competitive in a price sensitive market.

2. Applications: Products and Services related to applications fall into application maintenance and application development. These categories can be further classified based on the amount of intellectual property and the extent of customization.

Figure 7: Application customization vs importance of internal process trade-off matrix.

Customization

It has been observed from this research that packaged applications (such as customized ERP, CRM or SCM solutions) are illustrated in quadrant A of Figure 7. When IT adds proprietary products on top of packaged solutions (for example, proprietary risk assessment modules used in banks), then protecting the intellectual content becomes a primary driver (quadrant B). IT of custom application development and maintenance are further classified based on the intellectual content of the applications (quadrants C and D).

It is often stated that application maintenance is best suited for off shoring whereas new applications development, which requires steady user interaction,

is not amenable for off-shoring. IT must be careful in making these sweeping assumptions.

From our study it has been observed that major organizations; out source some of its low-risk new application development, but keeps core application maintenance in-house.

Figure 8: Matrix of outsourcing depending upon source and location of resources

Outsourcing can be defined as the transfer of any business function from one organizational entity to another. Outsourcing is not new and is not restricted to IT. However, its increasing acceptance as an alternative to in-house IT development and the use of IT services propelled IT outsourcing to be a significant component of an organization's IT strategy. From a U.S. perspective, outsourcing to companies located in the same national boundary or near it is often termed "near-shore" outsourcing, and farther distances, typically across the ocean, is labeled "off-shore" outsourcing. These distinctions are blurred because most "near-shore" outsourcer firms, such as IBM, EDS, and CSC, are not restricted to the U.S. Through subsidiaries and partnerships, these firms have established presence in countries that specialize in providing IT outsourcing services such as India and China. Based on the analysis of collected data & industry secondary data we can come to conclusion of the above matrix which gives the decision strategies based on source and location of resources based on domestic, non domestic, external and internal parameters.

3. Conclusion

This paper presents a strategic decision of IT services that Indian organizations provide and can outsource offshore most successfully. It has been observed that increasing use of offshore outsourcing is inevitable and that, as a result, the nature of IT work done by Indian nationals will move up the value chain to much-needed skills such as project management and business analysis. This paper attempts to answer the following areas:

a) The successful areas of offshore outsourcing in Indian context based on the strategic matrix developed

from the data of Indian context.

b) The time of realizing the benefits of offshore outsourcing for an organization in Indian IT & IT Service industry.

c) Various critical parameters based on which companies decide their need of outsourcing in Indian IT & IT service organization.

With respect to first point, it has been shown that outsourcing of IT services should be considered from three perspectives: People, Process (Projects), and Products & Services.

People: Access to lower-cost people can be managed by creating organization-owned development centers in the foreign country, contracting with offshore outsourcing vendors, or through use of off-shore-sourced human resources in the India. Costs and benefits of each form of governance are considered.

Process: Requirements volatility limits the sorts of projects that can be outsourced offshore effectively. Difficulties in cost estimation mean that outsourcing of development processes offshore should be adopted incrementally, to allow parties to refine project-control processes, rather than as a big-bang move offshore.

Products & Services: Two types of products and services can be outsourced offshore: infrastructure and applications. Infrastructure ranges from the very simple, such as Helpdesks, through call centers, to the very complex, (e.g., full-blown managed services). For applications, the important dimensions to consider are the importance of organization-owned intellectual property and the extent of organizational-specificity of the applications being developed and maintained.

With respect to realization of offshore outsourcing benefit, it has been observed that organizations that provide IT services within the Western Countries considering offshore outsourcing should plan on a two-year transition. By the end of the two-year period it is reasonable to expect that the use of offshore resources in projects will be seamlessly built into the enterprise's governance model. The reason it takes some years to make the transition is that it takes time for organizations to develop meaningful governance

strategies and metrics for managing the off-shore projects.

From our analysis it may be recommended that IT should focus particular attention to the life cycle model of off-shoring where early gains are not easy to sustain. This long-term view of costs, coupled with pragmatic risk mitigation strategies, is essential before IT can take advantage of off-shoring. The initial honeymoon period is followed by a period of adjustment where reality bites and organizations can develop meaningful governance strategies and metrics for managing the off-shore projects. These two stages last from a year to two years depending on the complexity of the engagement. In the final stage, when the offshore relationship is mature and the governance model/metrics are in place, IT can gain real benefits as found out in figure 9.

Based on our study it has been revealed that in Indian service organizations mostly doing their outsourcing for better customer satisfaction, increase the market share impact, integrating their customer, suppliers & employees for better productivity, reduction in their HR operation & PLC. Several parameters have been identified along with their criticality shown in Table 5 of this paper.

Finally the paper has identified different types of products and services and asserted that off shoring is not suitable for all kinds of projects. Specifically, it may concluded that IT pay close attention to applications that carry higher intellectual content and are proprietary to the organizations served by the firm.

Figure 9: Potential cost gains through outsourcing in Indian corporate perspective

In our study it has also been observed that, the identified critical parameters highly contribute to the performance of an organization. Depending upon the ratings & the nature of the parameters they have been identified in four critical groups. Those groups are respectively HR perspective, Strategic perspective, and Cost perspective and Organization perspective. The average values of summation are respectively Cost effectiveness: 2.83, HR perspective: 2.70, Organization Perspective: 2.55, Strategic Perspective: 2.50. Which have been considered as w1, w2, w3, w4. By using OWA technique, the respective weightages have been found out as w1 = 0.507, w2 = 0.205, w3 = 0.156, w4 = 0.132. In this study the values are compared in case of three companies say, derived value is 3.84 for ITC, 3.55 for Satyam and 3.50 for CMC. So from the analysis it may be concluded that this OWA based performance measurement technique is effective for any organizations those using mentioned parameters for performance measurement.

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