Chapter 10
Managing Issues of IT Service Offshore Outsourcing Projects

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Abstract Western countries' information technology and software intensive firms are increasingly producing software and IT services in developing countries. Regardless of the swift advancement in offshore outsourcing, there are arrays of issues that must be investigated in order for companies to benefit from the offshore outsourcing. Numerous significant benefits can be accomplished through the successful management of offshore outsourcing. Critical issues are the challenges that can happen throughout the lifecycle of offshore outsourcing IT service projects. This research will investigate these critical issues throughout the whole lifecycle of executed offshore outsourcing projects in the IT service industry from the client managerial perspective.

10.1 Introduction

Information Technology (IT) service offshore outsourcing describes the transfer of IT services to an offshore outsourcing supplier (OOS) in a near or far away country. The services themselves are partially or totally transferred [1, 13, 34, 38, 48, 59]. IT offshore outsourcing is worth being researched because it has specific characteristics that distinguish it from the well researched field of IT outsourcing. IT service and software development offshore outsourcing is becoming a dominant paradigm in the IT service and software development industry [72, 75].

Western countries' information technology and software intensive firms are attracted to offshore outsourcing in developing countries because of the promised benefits of: lower costs, faster delivery speed, the ability to focus their in-house

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IT staff on more higher value work, access to supplier resources, capabilities and process improvement [14]. IT outsourcing should not be viewed as a process that leads to instant success. Not all IT service and software development projects benefit from offshore outsourcing as half of the organizations that shifted processes offshore failed to generate the benefits they expected [23, 24, 48, 51]. The literature indicates that 20 % of offshore outsourcing software development contracts are cancelled in the first year, more than 25 % of all offshore outsourced software development projects are cancelled outright before completion and 80 % of offshore outsourcing IT projects overrun their budgets [39].

IT services and software development offshore outsourcing projects pose substantial issues and challenges to the client companies in managing these projects [20]. In IT service offshore outsourcing, delivery occurs under the additional condition of distance between the service supplier and the client in terms of physical distance, time zone differences or cultural differences. Additionally, complexity increases due to the higher degree of geographical dispersion among team members [36, 58, 72, 86]. Therefore, there is a need to investigate the critical issues of IT service offshore outsourcing projects from the client managerial perspective.

10.2 Sourcing Options

There are four major types of sourcing options for U.S. IT services and software development projects: (1) in-sourcing, (2) outsourcing, (3) off-shoring, (4) offshore outsourcing as shown in Figs. 10.1 and 10.2.

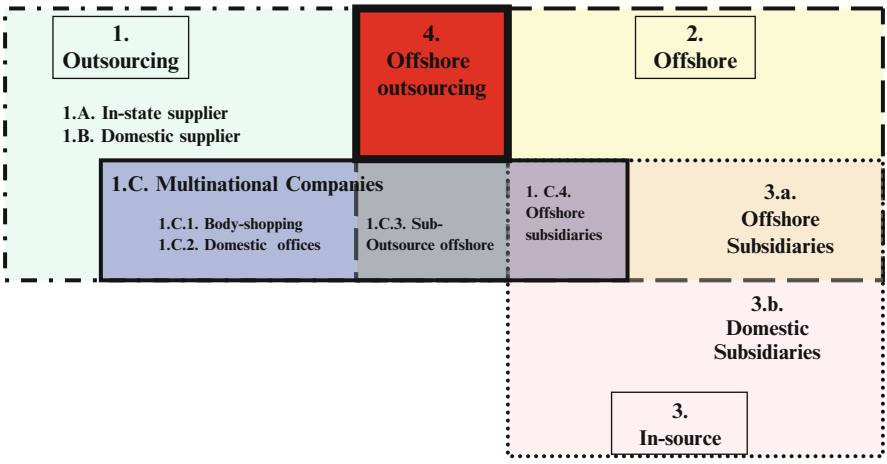

Fig. 10.1 Sourcing options

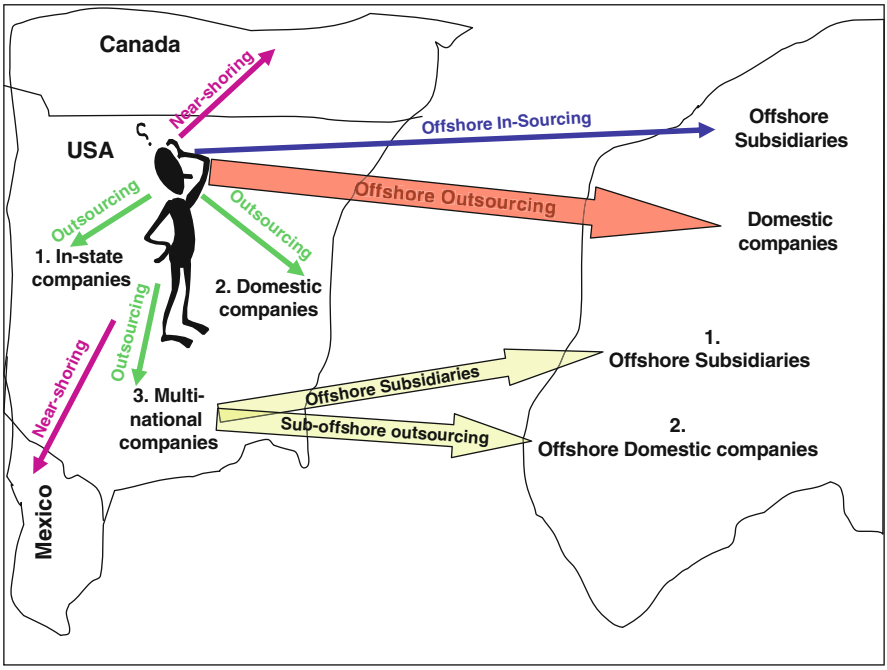

Fig. 10.2 Outsourcing and offshore options

1. *In-sourcing*: Decision makers decide to keep the IT services and software production in house on their own premises and in their home countries. Clients may also decide to build and operate their own facilities in domestic locations in their own country as domestic subsidiaries [13, 84].
2. *Outsourcing*: Decision makers decide to contract out part or all of a firm's IT services and software development to a domestic third party vendor [68]. The third party can be one or multiple domestic/national vendor or instate provider [35, 57].

    2.1 *Outsourcing with multinational companies*: Companies have their headquarters in high-wage countries open subsidiaries in low-wage countries to work on products and services for their domestic and global markets. Companies also can have their headquarters in low-wage countries open subsidiaries in high-wage countries to serve their local market(s) [63, 77]. For instance, some Indian enterprises set-up wholly owned facilities overseas to perform parts of the software development process. The most common practice is to perform systems analysis and design work at the customers' site while the rest of the development process is done from Indian and other locations of offshore development centers [41, 56]. Indian Firms hold a number of top ten positions across types of services offered. Key Indian players are Tata Consultancy Services (TCS), Wipro and Infosys as shown in Table 10.1.

Table 10.1 The top ten multinational companies and country of origin

Business services	Software development	Call centers
1. Hewitt Association *U.S.*	1. Tata Consultancy Services *India*	1. Convergys *U.S.*
2. ACS *U.S.*	2. Infosys Technology *India*	2. Wipro *India*
3. Accenture *U.S.*	3. Wipro *India*	3. ICICI OneSource *India*
4. IBM *U.S.*	4. Accenture *U.S.*	4. ClientLogic *U.S.*
5. EDS *U.S.*	5. IMB *U.S.*	5. 24/7 Customer *India*
6. Hewlett-Packard *U.S.*	6. Cognizant Technology Solutions *U.S.*	6. SR.Teleperformance *France*
7. Wipro *India*	7. Satyam *India*	7. eTelecare International *U.S.*
8. HCL Technology *India*	8. Patni Computer Systems *India*	8. SITEL *U.S.*
9. Tata Consultancy Services *India*	9. EDS *U.S.*	9. Teletech *U.S.*
10. WNS Global Services *India*	10. CSC *U.S.*	10. CustomerCorp *U.S.*

Source: National Association of Software and IT Service Companies (NASSCOM)—India's software regulatory board—http://www.nasscom.org, July 2002 [26]. Business Week (2006) [21]

Common workflows or delivery models that multinational companies such as Genpact, Accenture, IBM Services, Tata or any other outsourcing multinational companies (see Table 10.1) dispatch teams to thoroughly investigate the workflow of an entire IT department. The team then helps build a new IT platform, redesigns all processes, administers programs and acts as a virtual subsidiary. The contractor then disperses work among a global network of staff ranging from the U.S. to Asia and to Eastern Europe [21].

For instance, Tata Consultancy Services TCS is part of the Tata Group. TCS was founded in 1968 as a consulting service firm for the emerging IT industry. By 2006, TCS had expanded to become a global player with revenue over USD 2 billion with over 74,000 associates and 50 service delivery centers in 34 countries. TCS has developed a global delivery model in which tangible work is handled mainly by teams located remotely from clients, while a small team remains at the client's site. Usually, TCS's on-site and offshore teams conduct frequent interaction and collaboration with each other until a task is completed. TCS project teams based on-site, onshore, near-shore and offshore work together depending on the expertise and knowledge that reside within TCS's different locations. In an example beginning in late 2005, Netherlands based ABN AMRO Bank announced a USD 1.2 billion outsourcing contract with five providers. Tata Consultancy Services was one of the five and provides support and application enhancement services. The outsourcing project of the ABN AMRO Bank TCS contract consisted of three arrangements across three continents. Each arrangement type has an on-site component at the client site and a remote component somewhere else [64].

3. *Off-shoring*: Occurs when an organization moves work from one location to another location on a different continent [74, 75], researchers call it offshore in-sourcing and offshore subsidiaries [42].

4. *Offshore outsourcing*: Outsourcing of IT Services and software development work to a third party supplier located on a different continent than the client [74, 75]. This particular option has been quite prevalent in recent years and it will be examined in more detail.

10.3 Issues of IT Service Offshore Outsourcing Investigated in this Research

In offshore relationships, users and business analysts usually reside at the client side and technical analysts and developers tend to perform their work from offshore locations [48]. Large geographic distances substantially accentuate the complexity of coordination in such global set-ups and demand strategies for working efficiently [31]. Some of the most common challenges faced in offshore outsourcing projects relate to: over-expenditure, hidden costs [3, 41, 65, 82], communication problems, differences in project management practices, language barriers, time-zone differences, cultural differences, security and political issues and supplier site location [10, 47].

Raffo et al. [72] and Setamanit et al. [79, 80] identified the issues that affect the performance of offshore outsourcing for software development projects. Issues were identified and placed into three groups: fundamental issues, strategic issues and organizational issues as listed in Table 10.2, which will be described in further detail.

According to Raffo et al. [72] and Setamanit et al. [79, 80], fundamental issues, listed in Table 10.1, are directly impacted by the nature of all offshore outsourcing, including software development projects. These inherent obstacles can greatly impact the effectiveness of an project that has been outsourced offshore. However, by using an appropriate strategy and tool support, the project manager can mitigate the negative impacts of these issues. Communication issues could be caused by (1) inadequate informal communication and (2) loss of communication richness. Moreover, cultural and language differences are also identified as main challenges that affect the offshore outsourcing projects in many different ways. These include the effectiveness of communication and coordination, group decision making and

Table 10.2 Issues and challenges affecting the performance of offshore outsourcing for software development projects [72, 79, 80]

Fundamental issues	Strategic issues	Organizational issues
• *Communication issues* 1. Inadequate informal communication 2. Loss of communication richness • *Coordination and control issues* • *Cultural differences* • *Language differences* • *Time-zone differences*	• *Development site location* • *Product architecture* • *Development strategy* 1. Module-based 2. Phase-based 3. Follow-the-sun • *Distribution overhead* • *Distribution effort loss*	*Team formulation* *Team dynamics* (*building trust*)

team performance. A project manager working on a project that has been outsourced, particularly offshore, should develop a plan to address these communication issues. Failure to do so, could negatively impact the success of the project; and perhaps worse, an underestimation of the importance of these issues may have a leave a project manager having regrets during a post mortem of the project.

One of the most important global software development challenges is related to the requirements phase of software development [70]. The requirements phase asks for a great deal of communication between the client team and supplier team [76], and is particularly acute in offshore outsourcing teams [61]. Prikladnicki et al. [69, 70] suggest face to face requirements elicitation as functional business requirements can easily be misunderstood due to the organizational, distance, cultural and language differences [61]. Even in stable business environments [9, 27, 33, 61] the need for detailed requirements [17, 78] are required to overcome the difficulties of global software development. Also, the level of familiarity (precedent requirements) with similar requirements seems to have a positive impact on a project [9, 83].

Building on the work of Raffo et al. [12] and Setamanit et al. [79, 80] and other researchers [15, 22, 29, 48, 61, 69, 78] in the area of issues and challenges of offshore outsourcing IT service projects, the most common issues and challenges were identified and compared to other sourcing options as shown in Table 10.3 below. As shown below, although offshore outsourcing approaches are common, they are certainly not without risk.

The main differences between "outsourcing" and "offshore outsourcing" of IT services and software development from a financial point of view are the labor costs and transaction costs [19, 49, 71]. When offshore outsourcing is chosen, the labor costs are typically lower while transaction costs are high. Transaction costs are associated with the overhead required to facilitate the interaction between the client and service provider. Khan et al. [41] states that when companies offshore outsource, labor costs are up to ten times lower than domestic outsourcing but the transaction costs are much higher and less certain than domestic outsourcing. These transaction costs can be up to 75 % of the total costs of offshore outsourcing. Transaction costs include communication costs, travelling costs, costs of poor quality and extra testing among others. These transaction costs are sometimes considered as hidden costs [41]. Therefore, in Table 10.3, offshore outsourcing has high degree of challenges on the cost vector, particularly related to hidden costs and cost overruns.

Outsourcing to domestic suppliers potentially has the advantage of personnel speaking the same language and within the same cultural background. The downside is that local outsourcing (for western companies) is expensive due to labor costs [49]. Previous research addressed the issue of knowledge transfer due to cultural and language issues. Indeed, cultural and language issues may exist with a domestic service providers, but the cultural, language, communication issues are much more significant with the offshore outsourcing service providers [4–6].

Issues associated with outsourcing with multinational companies are considered medium degree and similar to outsourcing with domestic suppliers. Often, multinational service suppliers have offices in the client's home region to help assist with

Table 10.3 Issues/challenges level of sourcing options in terms of risk

	Sourcing types				
	In-sourcing		Outsourcing		
Issues/challenges	USA offices	Offshore subsidiaries	National vendors	Multinational companies	Offshore outsourcing
Over expenditure/Hidden costs incurred by the client [4–6, 50, 52]	Low	Low	Medium	High	*High*
Difference in interpretation of project requirements between the client and the supplier [78]	Limited	Low	Medium	Medium	*High*
Poorly developed and documented requirements by the client company	Limited	Low	Medium	Medium	*High*
Poor tracking and managing requirement changes by the client company [78]	Limited	Low	Medium	Medium	*High*
Lack of a full communication plan between the client and the supplier [46, 72, 79, 80]	Limited	Low	Medium	Medium	*High*
Communication and coordination problems between the client and the supplier [32, 78]	Limited	Low	High	High	*High*
Language barrier [4, 10, 47, 67]	Limited	Low	Medium	Medium	*High*
Time-zone differences between the client and the supplier [4, 10, 47, 67, 82, 85]	Limited	High	Low	Low	*High*
Cultural differences between the client and the supplier [4, 10, 32, 41, 47, 60, 85]	Limited	Low	Medium	Medium	*High*
Incomplete and unclear contract [32]	N/A	N/A	Medium	Medium	*High*
Contract renegotiation and termination	N/A	N/A	Medium	Medium	*High*
Difference in project management practices between the client and the supplier	Limited	Low	Medium	Medium	*High*
Unable to measure performance of the supplier	Limited	Low	Medium	Medium	*High*
Supplier technical/security and political issues [3, 4, 32, 41, 55, 67, 85]	Limited	Low	Low	Low	*High*
No previous experience of the supplier	N/A	N/A	Medium	Medium	*High*
Lack of supplier standardized working methods	N/A	N/A	Medium	Low	*High*
Poor execution plan-timing of transition to supplier [47, 82]	Limited	Low	Medium	Medium	*High*

any communication or cultural issues with an overseas facility. In fact, once a decision has been made to outsource with a multinational company, negotiation of the contract and the agreement is commonly signed with the domestic offices of that multinational company [40, 41, 56]. In this arrangement, the domestic office holds legal responsibility for delivering the services according to the specifications in the contract ensuring that savings, service levels, and other outsourcing objectives are attained as stipulated in the contract [40]. All communications between client and the international company will generally be routed through the specialized technical and legal personnel at the domestic office. Therefore, international companies will be treated the same as the outsourcing vendor with the exception of more expensive contracts to deliver high quality services [56, 63, 64]. Development of IT services and software costs vary substantially across nations because of labor costs. The cost of offshore outsourcing in India is the same regardless of the location of the client, but the labor costs of body-shopping to the US entails higher costs due to the higher wages paid [56, 62].

For example, Indian vendors such as WiPro and Tata consultancy (TCS) (see Table 10.1) have recognized the need for closer, personal, day-to-day relationships with major customers and have opened offices and increased staff in North America to provide them [42]. In addition, due to political situations and potential risks of natural disasters [43, 44], many multinational companies are developing backup sites in places such as the Philippines and Canada where English fluency is common [42].

As IT services and software development have high degrees of interaction between the client and the service provider with more dynamic requirements the likelihood of issues to arise increases. Each individual client-service provider interaction has the opportunity for communication problems, cultural differences, language and time zone differences to create higher levels of challenges in offshore outsourcing compared with in-sourcing and outsourcing options [2, 4] as indicated in Table 10.3.

Offshore subsidiaries are developed to overcome some of the problems with offshore outsourcing of IT services and software development to third party suppliers. Many firms have committed themselves to offshore in-sourcing strategy to obtain the advantages of low-cost professionals [53, 73]. In this model, foreign technology workers are employees of U.S. based companies and receive the same training, software tools and development process guidelines as their western counterparts [73]. The main difference between these workers and domestic employees is salary [42, 73].

Researchers have found that offshore outsourcing of IT services and software development work poses considerably more challenges than domestic outsourcing as shown in Table 10.3. Offshore outsourcing is more challenging because of time zone differences [11, 25], the need for more controls [16, 45], distance and time-zone difference [30, 64], cultural differences [15, 37, 66, 73, 81], language problems [5, 6, 8], having to define requirements more rigorously [27, 28], difficulties in managing dispersed teams [64, 66], security and political issues [3, 41, 85] as in Table 10.3. The complexity of an outsourcing decision, and specifically an offshoring one, should not be underestimated. While cost is a major motivating factor in

this decision, it is important, or even imperative, to consider costs beyond salary differential between two countries. Developing a plan that can be well executed to address the potential problems discussed here is a prudent step for any company considering offshore, or any type, of outsourcing as part of their strategy to deliver goods and services.

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