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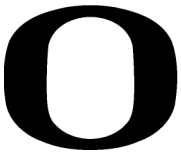

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IT Offshore Outsourcing: Best Practices for U.S.-Based Companies

CAPSTONE REPORT

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IT Offshore Outsourcing: Best Practices for U.S.-Based Companies

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Abstract

Outsourcing IT services from onshore to offshore allows an organization to access skilled labor while reducing development and testing times and expenditures (Trickett, 2003). As the trend of outsourcing IT services to offshore locations continues (Storti, 2015), organizations must understand how to mitigate the associated risks. This study examines the best practices and tools U.S. companies can utilize to overcome the challenges associated with offshore outsourcing, including cultural differences, language barriers, distance, and time differences.

Keywords: IT offshore outsourcing, outsourcing management, virtual team, global collaboration, nearshoring, communication tools, knowledge management, and offshore software development

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Introduction to the Annotated Bibliography

Problem Description

Offshore outsourcing was established in the United States in the late 1990s in reaction to the Y2K crisis as a means to acquire programmers to make code fixes to prevent problems that were anticipated to impact computer systems when the year 2000 arrived (Levine, 2012). Many major United States businesses turned to companies located in India for computer systems and programmers (Levine, 2012). Since these beginnings, outsourcing technology functions has grown in popularity; it is estimated that 65% of U.S. companies are sending Information Technology (IT) work offshore and that U.S. based companies accounted for 70 percent of the global offshore market in 2007 (Simon, Poston, & Kettinger, 2009).

Offshore outsourcing is a popular method of allocating certain business functions to companies outside of the organization to cut costs and access expert resources (Trickett, 2003). With offshore outsourcing, an organization hires an external organization to complete a certain business function outside of the country where the services are performed (Trickett, 2003). For the purposes of this research, offshore outsourcing is defined as the process of moving a business function to a foreign country and employing foreign labor to take advantage of skilled labor and/or price differential (Trickett, 2003).

Organizations frequently outsource white-collar occupations such as computer programming and systems design (Levine, 2012). This business model allows an organization to access skilled labor while reducing development and testing turnaround times and expenditures (Trickett, 2003). The number of people with information technology (IT) skills have traditionally exceeded the immediate needs of their local economies in countries like China, Eastern Europe, India, and the Philippines, areas that have low wages compared to those in the United States (Levine, 2012). Since IT services can be provided from many non-English speaking nations with

comparatively low-wages, organizations in the United States have leveraged this fact to move technology services across borders (Levine, 2012).

Research has shown that offshoring has advantages and disadvantages but can be advantageous when the risks and disadvantages are mitigated (Trickett, 2003). Advantages of offshoring extend beyond economic benefits and include improved IT project quality through flexibility in finding skilled workers, the ability to tackle new types of projects attributable to access to skills the organization lacks, and managing headcount efficiently by adding and removing offshore resources to meet dynamic staffing needs (Alavi, Struss, Chang, Kim, & 2004).

Disadvantages of offshoring include communication challenges due to cultural divide, which is a result of how people interpret others' behavior (Storti, 2015). Storti (2015) notes that people interpret others from their perspectives, informed by their own cultures; however, the behavior of someone from another culture might have a completely different meaning. For the purposes of this study, cultural divide is defined as misunderstanding, misinterpretation, missed deadlines, and frustration due to cultural differences (Storti, 2015).

As organizations expand into other regions of the world, language barriers, distance, and time differences can also make communication difficult between offshore and onshore teams (Storti, 2015). When Westerners interact with offshore resources, they can encounter communication challenges that can result in smaller than expected cost savings, slower knowledge transfer, production delays, and missed deadlines (Storti, 2015). A lack of understanding of the cultural differences between the onshore and offshore teams, along with limited face-to-face interactions, can contribute to problems in communication (Storti, 2015).

Organizations that engage in offshore outsourcing can mitigate the risks by understanding the various mechanisms, tools, and techniques that will allow them to effectively deal with the

challenges (Herath & Kishore, 2009). The focus of this study is to identify proven best practices and tools to enable United States companies that engage in the offshore outsourcing of IT services to do so successfully.

Purpose Statement

The purpose of this qualitative study is to present research on tools and best practices that organizations can utilize to allow them to successfully outsource their IT services to offshore locations. The design of the study is a literature review. The method of inquiry is the collection, sorting, review, annotation, and analysis of selected research articles.

This study provides a review of literature on the best practices and tools IT organizations can utilize to effectively communicate with their offshore, outsourced teams. As the trend of outsourcing IT services from onshore to offshore continues to expand (Storti, 2015), organizations that engage in offshore outsourcing will benefit from understanding and mitigating risks associated with communication between teams with cultural differences.

Research Question

Main question. What best practices and tools can United States based companies use to successfully outsource their IT services to offshore locations?

Description of Audience

In an effort to cut costs, many organizations outsource IT functions to offshore locations due to higher domestic salaries (Alavi, Struss, Chang & Kim, 2004). Whether outsourcing is successful depends on knowledge and resource exchange between teams, as well as collaboration and cooperation (Wibisono, Govindaraju, Irianto & Sudirman, 2019). This study will provide a review of the best practices and tools IT organizations can utilize to effectively communicate with their offshore, outsourced teams. Information Technology professionals who interact with, are a part of, or lead outsourced teams can use this study to gain insights into how to effectively

collaborate with their offshore counterparts. Interactions with outsourced IT staff can be in the form of face-to-face communications, email, instant message, or other web-based applications (Storti, 2015). The audience for this study is employees who are based in the United States who interact with outsourced IT staff regularly. The study is focused on organizations based in the United States because as emerging countries continue to enhance the education of their workforces and modernize their infrastructures, the opportunities for IT offshoring increase (St. John, Visinescu, Guynes, & Prybutok, 2016).

Stakeholders who will find this study useful include Chief Information Officers (CIOs), IT directors, IT managers, IT project managers, developers, testers, and production support associates. Information Technology leaders such as CIOs, IT directors, IT managers, and IT project managers will gain value from this study by understanding the best practices and tools they can use to effectively manage outsourced IT teams who provide production and project support. Developers, testers and production support associates will benefit from this study by learning the best practices and tools to successfully communicate and share knowledge with their offshore, outsourced team members and counterparts.

Search Report

Search strategy. When searching for sources, I primarily used databases on the University of Oregon (UO) Libraries site. The databases that I found relevant and utilized were the ACM (Association for Computing Machinery) Digital Library, CiteSeerX, EBSCOhost (Information Science & Technology Abstracts), and IEEE (Institute of Electrical and Electronics Engineers) Xplore. Outside of the UO site, I also used Google Scholar and ResearchGate. While I used Google Scholar to search for sources, many of the sources that Google Scholar returned from these searches were not recent publications; therefore, while I used Google Scholar to search for sources, I closely reviewed the dates the sources were published before selecting any

for use as references. ResearchGate is a site where researchers can collaborate by sharing reports; I used this network research site to identify sources related to IT knowledge management and factors for successful IT offshore outsourcing.

The searches I performed produced a large number of results focused on the advantages and disadvantages of outsourcing, but there was limited information specifically regarding onshore/offshore communication.

Keywords. I used the following keywords to retrieve relevant sources:

- Offshore outsourcing,
- IT offshore outsourcing,
- IT outsourcing companies,
- Offshore outsourcing,
- Outsourced IT services,
- Information technology outsourcing,
- IT communication tools,
- Knowledge transfer tools,
- IT nearshoring,
- Outsourcing management,
- Communication and IT offshore outsourcing,
- Communication AND offshore outsourcing,
- IT outsourcing AND offshoring,
- IT outsourcing AND communication,
- Outsourcing process AND communication,
- Communication tools, and
- Communication tools in the workplace.

Search engines and databases. I primarily performed the searches using databases found on the University of Oregon Libraries website. Also, I utilized Google Scholar and ResearchGate.

I used the following search engines:

- UO Libraries' LibrarySearch and
- Google Scholar.

I accessed the following databases:

- ACM Digital Library,
- CiteSeerX,
- EBSCOhost Computer Source,
- EBSCOhost Library, and
- IEEE Xplore.

I used the following research networking site: ResearchGate.

Documentation method. I documented references, databases, and keyword searches in a Microsoft Excel spreadsheet. The spreadsheet contains a list of each reference I found and documents the document title, date of publication, link to the article, and citation. I backed up the spreadsheet to a removable Universal Serial Bus (USB) storage drive.

Reference Evaluation Criteria

I evaluated references using the five characteristics described in the Evaluating Information Sources guide by the University of Florida's Center for Public Issues Education (CPIE) (2014).

- **Authority:** I limited my sources to authors that are frequently cited by other authors in the fields of business and technology and authors associated with established, reputable institutions.
- **Timeliness:** I limited my sources to those that provide information on tools that were published within the last 10 years because of rapidly changing technology. I selected sources that provide information on best practices that were published within the last 15 years to keep practices current; however, this area is changing less rapidly when compared with tools and related technology. A single work that will be useful for defining and framing my research question falls outside of this range. The source, Trickett's (2003) "Chapter 2: Outsourcing models--Costs, benefits and risks" from Cottam's (Ed.) *The Practical Guide to BSS and OSS Outsourcing*, contains valuable definitions and information on offshoring models that are still applicable today.
- **Quality:** I selected literature that was error-free and contained accurate spelling and grammar. I made exceptions for literature where American English is not the author's first language.
- **Relevancy:** I selected literature that focused directly on the topics of my research, namely offshore outsourcing, factors that result in communication challenges and cultural differences between onshore and offshore teams, and tools and best practices to address these challenges. While my study is focused on organizations that are based in the United States, I considered and, in some cases, included sources reporting on studies conducted in other countries when I determined the content applied to the target audience.
- **[Lack of] Bias:** I selected sources that were published in peer-reviewed, scholarly journals or books. I selected one source by a consultant researcher, Storti (2015). After a

thorough review of the sources, I determined this source was generally not biased or aimed at selling products and/or services.

Annotated Bibliography

The following annotated bibliography presents 15 sources that examine the challenges associated with offshore outsourcing as well as the processes that companies use to successfully outsource to offshore locations. Each annotation consists of three elements: (a) the full APA bibliographic citation, (b) an abstract, and (c) a summary. The abstracts included are as published by the authors and have not been modified. The summaries present a discussion on the models, challenges and best practices that United States based companies can use to successfully outsource their IT services to offshore locations, which will be useful for CIOs, IT directors, IT managers, IT project managers, developers, testers, and production support associates.

The sources have been divided into three sections. The first section, Models of Offshore Outsourcing, focuses on the relationship between vendor and client organizations and examines the subject of nearshoring versus traditional offshoring. The second section, Benefits and Challenges of Offshore Outsourcing, focuses on the benefits and the challenges encountered with this staffing model. The final section, Best Practices and Tools for Offshore Outsourcing, focuses on mechanisms that organizations can use to overcome the risks and challenges associated with offshore outsourcing of their IT services.

Models of Offshore Outsourcing

Carmel, E., & Abbott, P. (2007). Why 'nearshore' means that distance matters. *Communications of the ACM*, *50*(10), 40-46. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.620.4579

Abstract. When sourcing abroad, a growing number of companies now weigh whether the location is near vs. far. As the outsourcing and offshoring phenomena matured, the marketplace has sought increased differentiation on the basis of location through a range of ‘shoring’ and ‘sourcing’ terms. “Rural-sourcing,” “two-shoring,” “best-shoring,” and

at least a dozen other expressions have emerged. Prominent among these is “nearshore,” which first appeared in the software/IT field in an article about an entrepreneurial software development venture established in the island of Barbados. Nearshore was presented then as a reaction to the main offshore destination, India, which was viewed as “farshore,” a very distant destination, many hours to travel, many time zones away, and a very different culture.

Summary. Carmel and Abbott explore nearshoring, a model of offshoring that offers the benefits of offshoring, while mitigating some of the challenges imposed by distance. The authors define nearshoring as the process of sourcing service work to a foreign, lower-wage country that is relatively close in distance or time zone (or both). According to the authors, studies have shown that in distributed software development, distance introduces difficulties in communication, supervision, coordination, creating social bonds and building trust. The authors state that the ubiquitous nature of technology has led to the assumption that the physical location of teams is not an issue because it is assumed that technology can easily resolve issues with common interactions such as ineffective communication and lack of collaboration. However, nearshoring challenges this assumption and emphasizes location and proximity.

The authors reviewed 150 sources related to the meaning and scope of nearshoring and identified the necessary geographic characteristics and constructs of a nearshore destination. The authors identified the constructs of a nearshore destination, including physical proximity, time zone overlap, similar cultural characteristics, linguistic similarities, political or economic grouping, and some historical connections. Political or economic alignment can be advantageous for nearshoring partners; for example, enabling easier access to visas. Physical proximity followed by linguistic similarities were the

most consistent characteristics of nearshoring across all of the reviewed sources. The authors noted that if engineers need to interact frequently, the convenience of close physical proximity and time zone overlap are critical to enable collaboration.

The authors identified 51 countries as nearshoring destinations in three major global clusters for outsourcing countries around the world. One cluster of 20 nations surrounds North America, another cluster of 27 nations surrounds Western Europe and a third cluster of four nations resides in East Asia. The authors state that "nearshore" has become a convenient label for companies seeking to differentiate themselves from Indian offshoring. While the global marketplace for IT services continues to expand, they believe that the nuances with the term nearshore will remain.

Khan, S. U., & Khan, A. W. (2017). Critical challenges in managing offshore software development outsourcing contract from vendors' perspectives. *The Institute of Engineering and Technology*, *11*(1), 1-11. doi:10.1049/iet-sen.2015.0080

Abstract. Offshore software development outsourcing (OSDO) is a Global Software Engineering paradigm for developing high quality software at low cost in low-wage countries; where client organisation contracts out all or part of software development activities to vendor organisation. The vendor organisation provides the agreed software development work in return for remuneration. The objective of the research is to identify critical challenges faced by vendor organisations in management and execution of OSDO contract, and to analyse the identified challenges based on the variables such as time/year and organisational size. The authors have used systematic literature review for the identification of the challenges in OSDO contract. They have identified that 15 challenges faced by vendors in OSDO contract. Amongst these, nine challenges were marked as critical challenges. They have further analysed the identified challenges based

on different variables such as organisational size, time and correlation analysis. Vendor organisations should concentrate on addressing the identified critical challenges such as 'lack of project management', 'poor monitoring system', 'lack of outsourcing relationship management', 'cultural and linguistic issues', 'non-competitive price', 'intellectual property rights (IPR) and regulatory issues', 'failure to manage end-user expectation', 'lack of negotiation strategies' and 'unforeseen contingencies' for successful outcome of OSDO contract.

Summary. This paper is important to my study because the authors examine the relationship between the vendor and client organizations in the offshore software development outsourcing (OSDO). The authors use systematic literature review (SLR) to identify the various challenges faced by the stakeholders. The authors further broke down the most common challenges based on the size of the organization. Key findings were that critical challenges for organizations of all sizes that engage in offshore outsourcing of software development include a lack of project management, poor tools for monitoring computer systems, regulatory issues, cultural issues, issues with language, and a lack of outsourcing relationship management. This source is useful because it identifies the challenges of using a vendor for offshore outsourcing of software development.

Benefits and Challenges of Offshore Outsourcing

Davis, G. B., Ein-Dor, P., King, W. R., & Torkzadeh, R. (2006). IT offshoring: History, prospects and challenges. *Journal of the Association for Information Systems*, *7*(11), 770–795. ISSN:1536-9323

Abstract. Offshore provision of IS/IT related services has been growing rapidly in recent years and seems firmly set to continue. This trend is fueled by the many advantages of offshore service procurement; however, there are dangers in this practice. Furthermore, offshoring requires adaptation of the IS function and IS management. This, in turn suggests the need for modifications of IS curricula in order to prepare graduates for the new environment. The advantages of offshoring are those of outsourcing in general — cost saving and allowing the organization to focus on its core activities. The main dangers include loss of possibly-important business skills and reliance on remote suppliers who face risks that are unfamiliar to the client firm. The loss of jobs due to offshoring also introduces political considerations. Offshore IS activities are generally the responsibility of an organization's CIO. This management responsibility requires awareness of cultural and legal differences and of risks associated with offshoring and outsourcing in general. Offshoring has an effect on job opportunities for graduates of information systems programs. The number of some jobs will shrink, but new positions with new responsibilities are likely to emerge. Training of students in the U.S. and other countries in the developed world to function in an environment of offshored operations will introduce new IS roles and skills and require the adaptations of IS curricula.

Summary. The authors state that the logic behind offshoring is twofold. First, offshoring allows organizations to focus on their core competencies while contracting with others who specialize in other necessary activities. Second, the authors note that offshoring is a strategy to allow the organization to exploit lower costs in foreign locations to become more profitable. The authors examine the issues related to the practice of outsourcing information systems activities to offshore providers. These issues include the economic impact of the practice on nations and organizations; the authors found that the

globalization of IT services means that many IT jobs will be performed abroad, but the now less-expensive imported software can be knit together by people in the U.S. who are close to the customers and can tailor the software to meet the business needs of their customers.

The authors also identify risks and dangers associated with outsourcing information systems activities to offshore providers, including deskilling the organization, opportunism, political upheaval, and financial risks. Deskilling the organization includes the risk that the parent organization will not maintain the necessary skills that are being provided by the offshore outsourcing vendor. The authors note that this model of offshoring can result in various forms of opportunism by the vendor company because the vendor has learned the critical business skills to now compete with the outsourcing organization, and the vendor has greater control over the critical decisions of the organization. Political upheaval risks can occur when organizations are persuaded to operate in unstable countries. Wages tend to be lower in less stable countries; however, there is the threat of disruptions, which can arise from political upheaval or war in the offshore country. Financial risks include the negative impact on job opportunities within the local nation because these IT services are now being performed abroad. Finally, the authors provide curriculum considerations for information systems managers of offshore teams, including a bigger emphasis on integrating technologies between the offshore and local teams and providing a better awareness of cultural issues and the means to address them.

The authors note that moving IT activities offshore results in greater costs and risks than other offshoring activities, such as the offshoring of manufacturing activities, because there is a greater risk that the activities being outsourced offshore will be less

understood and more poorly documented by the client firm. The authors also suggest that offshoring introduces difficulties related to cultural differences and different expectations about key aspects such as quality, deadlines, and overtime.

Djavanshir, G.R. (2005). Surveying the risks and benefits of IT outsourcing. *IT Professional*, *7*(6), 32-37. doi:10.1109/MITP.2005.153

Abstract. In this article a survey of senior IT managers points to political and legal issues as the top risk concerns. These managers also say offshoring can create more jobs. Most companies consider offshore outsourcing as a way to reduce cost and increase efficiencies. Outsourcing can be a viable option for companies and can also help businesses and economies in the countries involved, as long as the outsourcing company objectively identifies and analyzes the benefits and risks.

Summary. The author identifies the risks and benefits associated with IT offshore outsourcing. The author designed a questionnaire to identify the risk and benefit factors that IT managers deem important when considering offshore outsourcing. The survey was in the form of a questionnaire and 303 senior managers at various IT companies located within North America and Western Europe participated. The questionnaire required people to rate the importance of factors on a scale of 1 to 5, with 1 being the least important and 5 being the most important factor. The results of the survey concluded the most important benefits included the following: (a) labor cost reduction (4.9 rating), (b) access to the host country's skilled workforce and talents (4.9 rating), (c) follow-the-sun (24/7) continuous operation (3.7 rating), and (d) improved flexibility and agility (3.4 rating).

The author elaborated on the benefits of offshoring IT activities, stating that offshore outsourcing can save IT companies up to 40 percent in operational expenses

when compared to an operation based in the U.S. In addition, offshore locations have higher-skilled workers at a lower cost when compared with North America and Western Europe, and less than 10 percent of students graduating in the U.S. at the time of publication were graduating with a degree in engineering. Finally, leveraging offshore locations allows IT companies to take advantage of different time zones to provide around-the-clock production and project support.

The survey results also indicated that the most important risks included the following: (a) political (4.8 rating), (b) legal enforcement of intellectual property rights and business contracts (4.6 rating), (c) information vulnerability and security (4.5 rating), (d) immature business environment (4.3 rating), and (d) socio-cultural problems (4.1 rating). This source is important to my study because it identifies the benefits and risks for IT companies that decide to offshore outsource IT activities.

Herath, T., & Kishore, R. (2009). Offshore outsourcing: Risks, challenges, and potential solutions. *Information Systems Management*, *26*(4), 312–326. doi:10.1080/10580530903245549

Abstract. While offshore outsourcing is associated with several benefits, these ventures also pose many risks. In this paper, through an in-depth review, we develop a type 1 analysis theory about the various risks involved in offshore outsourcing projects, the challenges faced by managers in these collaboration initiatives, and solutions that may aid in overcoming those challenges. This paper contributes to both the theoretical and practice domains by providing a comprehensive offshoring challenges and solutions framework.

Summary. The authors present the risks, challenges, and implications of IT offshore outsourcing. One risk arises when outsourcing IT operations and there is limited expertise

on the client or vendor side, or both. Technology and technical challenges pose other risks. For example, when vendor and client teams are working across sites, a lack of technical synchronization between the client and vendor harms the outsourcing relationship because the client firm may lose confidence that the vendor is capable of delivering the requirements.

The authors discuss challenges related to strategic decisions, including deciding what IT functions to outsource and the correct proportion of IT assets to outsource. Challenges associated with vendor selection include selecting the right vendor who has up-to-date technical skills, is a good match for the client organization's culture, and has experience scoping similar projects. Vendor management challenges include maintaining enough control and understanding the technologies the vendors use.

The authors offer solutions to the above challenges. To address the challenges related to strategic decisions, the authors recommend outsourcing service activities that can be disaggregated and using vertical and horizontal *chunkification*, or breaking processes into smaller chunks. Vertical chunkification is the process of outsourcing to a single vendor for a sole process or activity. Horizontal chunkfication is the practice of using multiple vendors to outsource the same business process or activity. The overlap that occurs with horizontal chunkification reduces the organization's strategic dependence on a single vendor.

To address the vendor selection challenges, the authors recommend using decision tools that encompass multiple vendor evaluation criteria and selecting a vendor with a cultural and organizational fit. Vendor management challenges can be addressed by selecting a contract type that meets the needs of the firm and aligns to the expectations

of the outcome; employment of vendor, project, and process management; employing controls; and using the balanced scorecard approach to measure performance.

This article is important to my study because the authors identify the various risks associated with outsourcing IT services and present solutions to the various challenges posed.

Ramingwong, S., & Sajeev, A. S. M. (2010). Influence of culture on risks in offshore outsourcing of software projects: A quantitative study on mum effect. *2010 2nd IEEE International Conference on Information Management and Engineering.* doi:10.1109/ICIME.2010.5478107

Abstract. The growth of offshore outsourcing of software projects is phenomenal. Offshore outsourcing generally occurs from developed nations to developing nations. It is undeniable that several major issues, such as culture, could subtly influence the success of such projects. Mum effect is an important risk in offshore outsourcing of software projects. The degree of intensity and probability of this particular risk is likely to be different in different cultural environments. This study investigates the relationships between mum effect and Hofstede's cultural dimensions by collecting data from hundreds of Thai IT professionals. Several mitigation strategies are also discussed.

Summary. In this paper, Ramingwong and Sajeev present the risk of the *mum effect* in offshore outsourced software development projects. The mum effect, or "code of silence," is the phenomenon where although a project stakeholder is aware of significant issues within the project, he or she remains silent. The authors identify mum effect factors as fear of consequences, communication gap, team solidarity that leads to a reluctance to complain, information asymmetry or an imbalance of knowledge between teams, and organizational cultures that are influenced by different cultural dimensions. A

communication gap between individuals of different cultures occurs when the intended meaning is not what is understood by the recipient.

The authors examine how culture influences the risk of the mum effect and conclude that the mum effect has a higher risk in offshoring projects. The authors determined that the most influential risk factor for the mum effect is the fear of consequences. The authors offer multiple approaches to prevent the mum effect such as encouraging feedback from subordinates, offering anonymous communication channels, increasing awareness and understanding of each other's cultures, and reducing power inequity. In order to reduce power inequity, the authors state that supervisors should encourage their staff to report problems and minimize autocratic management.

Best Practices and Tools for Offshore Outsourcing

Heesch, U. V. (2015). Collaboration patterns for offshore software development. In *Proceedings of the 20th European Conference on Pattern Languages of Programs*, (21), (pp. 1–10). doi:10.1145/2855321.2855343

Abstract. Global sourcing in IT projects becomes increasingly important in medium and large-scale software projects to keep up with growth and innovation demands of the industry. Offshore contribution in software projects can reduce cost and development time, but it comes with special challenges that need to be addressed. Apart from large geographical distance, cultural and communication differences need to be anticipated in order to tap the full potential of offshore and onshore collaboration. This paper reports on two collaboration patterns for software projects with offshore contributions, the author observed in industrial practice and in the literature.

Summary. The author describes patterns, problems, and solutions he identified through his own experiences as a project manager of offshore projects. Heesch states that although several countries from Asia, America, and Europe provide low-cost software development services, India is the leader in offshore IT services. The author analyzes the challenge of working across geographical boundaries when teams are mixed between onshore and offshore resources.

Heesch introduces concepts on how to assign responsibilities and maximize collaboration between junior and senior positions for offshore projects to exploit experience. One of the key concepts the author introduced is that when staffing offshore software projects, it is important to break down barriers between offshore and onshore teams. Heesch asserts that this goal can be accomplished by unifying teams and treating offshore and onshore teams as one team by communicating to the entire team rather than

a subset and regularly enabling team members to travel across locations so that they are spending time together in person rather than virtually. The author notes that including team members from both shores in communications can be difficult since sharing information on the office floor may be more convenient; however, he notes it is important that information is instead shared on conference calls with both onshore and offshore teams participating. This source is important for this study because it outlines a framework for managing teams who are working across geographical boundaries, which will be important for identifying the best practices U.S. based companies should follow when offshore outsourcing their IT services.

Huong, N. T., Katsuhiro, U., & Chi, D. H. (2011). Knowledge transfer in offshore outsourcing: A case study of Japanese and Vietnamese software companies. *Journal of Global Information Management, 19*(2), 27-44. doi:10.4018/jgim.2011040102

Abstract. This paper discusses the knowledge transfer process in offshore outsourcing. The focus is a case study of software offshore outsourcing from Japan to Vietnam. Initial results confirm that willingness to cooperate and good impressions facilitate the knowledge transfer process. In addition, communication barriers, cultural differences, lack of equivalence in individual competence, and lack of common rules slow down the transfer process. The study also identifies the Bridge System Engineer (Bridge SE)-a type of coordinator who mediates and enhances the relationship between Japanese clients and Vietnamese service providers. Employing a Bridge SE is an effective way to fill the communication gap, the cultural gap, and generally improve the business relationship. Bridge SEs use their background of higher education and long-term residence in Japan to give advice to Vietnamese software teams on Japanese cultural characteristics, such as the apology culture and the separation between work and private time. In other situations,

Bridge SEs use their IT background and communication skills to verify and adjust communication contents before information is sent from one side to another.

Summary. In this paper, Huong, Katsuhiro and Chi discuss the concepts and factors that influence knowledge transfer in organizations that utilize offshore outsourcing. The authors state that successful knowledge transfer is not easy to accomplish. They conducted a study using canonical correlation analysis of a data set consisting of 271 observations of 122 best practices for knowledge transfer in eight companies; they focused on offshore outsourcing from Japan to Vietnam. The authors found Vietnam to be an attractive offshore location for Japanese companies because of the country's adaptive culture, near-shore location, cultural compatibility, political stability, and government incentives. Vietnam is considered a nearshore location because of its geographical proximity to Japan, along with a similar time zone and short travel distance. Although Vietnam software development is not as mature as other offshore locations, the authors describe how Japanese software development firms create contracts, modify their approach and utilize Bridge Software Engineers (Bridge SEs) to accommodate this lack of experience. The authors describe Bridge SEs as a type of coordinator who mediates and enhances the relationship between Japanese clients and Vietnamese service providers.

This source is important to my study because it discusses the importance and role of Bridge SEs in the knowledge transfer process. The authors discuss the main role of the Bridge SE, which is to fill communication and cultural gaps and improve the business relationship between the client firm and vendor. While in this case, they examine the importance of the Bridge SE between Japanese companies and vendors located in China and Vietnam, this principle is still applicable to other offshore outsourcing partnerships.

The author found that Bridge SEs are effective at filling communication gaps and adjusting communication content before sending the information to the other side.

Kotlarsky, J., Scarbrough, H., & Oshri, I. (2014). Coordinating expertise across knowledge boundaries in offshore-outsourcing projects: The role of codification. *MIS Quarterly, 38*(2), 607-A5. doi:10.25300/MISQ/2014/38.2.13

Abstract. The coordination of effort within and among different expert groups is a central feature of contemporary organizations. Within the existing literature, however, a dichotomy has emerged in our understanding of the role played by codification in coordinating expert groups. One strand of literature emphasizes codification as a process that supports coordination by enabling the storage and ready transfer of knowledge. In contrast, another strand highlights the persistent differences between expert groups that create boundaries to the transfer of knowledge, seeing coordination as dependent on the quality of the reciprocal interactions between groups and individuals. Our research helps to resolve such contested understandings of the coordinative role played by codification. By focusing on the offshore-outsourcing of knowledge-intensive services, we examine the role played by codification when expertise was coordinated between client staff and onsite and offshore vendor personnel in a large-scale outsourcing contract between TATA Consultancy Services (TCS) and ABN AMRO bank. A number of theoretical contributions flow from our analysis of the case study, helping to move our understanding beyond the dichotomized views of codification outlined above. First, our study adds to previous work where codification has been seen as a static concept by demonstrating the multiple, coexisting, and complementary roles that codification may play. We examine the dynamic nature of codification and show changes in the relative importance of these different roles in coordinating distributed expertise over time.

Second, we reconceptualize the commonly accepted view of codification as focusing on the replication and diffusion of knowledge by developing the notion of the codification of the "knower" as complementary to the codification of knowledge. Unlike previous studies of expertise directories, codification of the knower does not involve representing expertise in terms of occupational skills or competences but enables the reciprocal interrelating of expertise required by more unstructured tasks.

Summary. Kotlarsky, Scarbrough, and Oshri performed a study to resolve contested understandings of the role played by codification, defined as a process that supports coordination by enabling the storage and ready transfer of knowledge, in an offshore-outsourcing project and to reconceptualize the view of codification concerning these projects. The authors note that there is a lack of consensus on the role played by codification of knowledge in offshore outsourcing among coordinating expert groups. Their study focused on the importance of coordination between the different expert groups of an offshore-outsourcing project. The authors assert that codification of knowledge can mitigate the lack of interpersonal interaction between the different groups in an offshore-outsourcing setting.

The authors also performed a case study where they analyzed an outsourcing deal between ABN AMRO Bank and TCS; their focus was on the transition of systems and services from an onshore team to an offshore outsourced company. By the end of the transition, TCS was expected to be able to sufficiently support the client systems and future applications. The authors collected data between 2006 and 2008 in the form of interviews conducted with both the onsite and offshore teams. The onsite teams were in Amsterdam and the offshore location was Mumbai. The authors selected interviewees from the teams who were working closely together from these remote locations,

including executives, managers, team leads and developers. The authors analyzed the interview data by using an open-coding technique where codes were assigned as chunks of text that described specific activities, and the chunks were associated with categories, subcategories, and concepts.

The authors discovered that during the initial phases of the transition from the onshore to the offshore team, expertise coordination relied on establishing roles, routines, and protocols, while in the later stages of the transition, project teams relied on improvised modes of coordination to resolve incidents. The authors noted that the codification of knowledge helps to support the transfer of knowledge between teams, which can be accomplished by implementing routine practices. The authors reported that TCS employees made efforts to understand and document the knowledge of the bank's staff into a meaningful language that TCS SMEs could understand, which helped to overcome syntactic and semantic differences between both TCS and ABN AMRO.

Prikladnicki, R., & Audy, J. N. (2012). Managing global software engineering: A comparative analysis of offshore outsourcing and the internal offshoring of software development. *Information Systems Management*, *29*(3), 216–232. doi:10.1080/10580530.2012.687313

Abstract. In this article, the authors compare offshore outsourcing and the internal offshoring of software development. Empirical evidence is presented from a case study conducted in five companies. Based on a detailed literature review, a framework was developed that guided the authors' analysis of the differences in the challenges faced by companies and the patterns of evolution in the practice of software development in each business model.

Summary. The authors analyzed how companies are distributing software development work inhouse and around the world. The authors examined two scenarios for offshore

development: offshore outsourcing and internal offshoring. Offshore outsourcing is defined as when a company contracts services to an external organization physically located in a different country. Internal offshoring occurs when the parent company contracts the work out to one of their wholly-owned subsidiaries that is physically located in a different country.

The authors compared offshoring business model, offshore outsourcing versus internal offshoring, and listed the advantages and disadvantages of each. The authors identified advantages of offshore outsourcing as lower costs, better access to continually-enhanced technology and the ability to benchmark to industry and global standards. The authors noted limitations of offshore outsourcing were less control over process delivery, limitations to specific functions within a business process, unproven service offerings, limited industry knowledge, communication difficulties, lack of requirements documentation, unsuccessful knowledge management, and lack of configuration management.

The authors noted the advantages of internal offshoring as the realization of cost benefits when moving a process to a foreign geographical location, control over processes, control over knowledge and better security. However, disadvantages of internal offshoring include a higher cost when compared to offshore outsourcing and a slower response to change. This article is important to my study because it provides a direct comparison between two very common business models in offshore software development. The authors identify and compare the advantages and disadvantages of two of the most common offshore software development business models. The authors also identify the challenges of offshore outsourcing.

Simon, J., Poston, R., & Kettinger, B. (2009). Creating better governance of offshore services. *Information Systems Management*, *26*(2), 110–122. doi:10.1080/10580530902794778

Abstract. Given the extensive history that companies now have with offshore outsourcing and the critical role that it continues to play, it is vital that we synthesize the many lessons learned and formalize them into a workable and flexible governance model. A review of the leading academic and practitioner literature on offshore outsourcing provided the basis for development of nine attributes of best practices/ maturity. These attributes were used further to propose a framework for mature offshore outsourcing governance. We conducted a case study of a leading U.S.-headquartered multinational company and its major offshore vendors, some of whom the company had been involved in offshoring with for many years. By juxtaposing the case study experiences with the disparate literature on offshore outsourcing and IT governance, a proposed model for mature offshore outsourcing governance emerged.

Summary. The authors examine how to create a better governance model for offshore outsourcing services. The paper highlights key statistics that stress the criticality of a good offshore outsourcing model. The authors note that in 2007, 65 percent of U.S. companies were sending IT work offshore and U.S. companies accounted for 70 percent of the global offshore market and 80 percent of India's offshore clientele. The authors state that companies use offshore outsourcing to take advantage of low labor costs, access specific skill sets, and realize greater flexibility in staffing costs.

The authors state that as vendor-client relationships in offshore outsourcing ventures mature, the vendor should move away from performing staff-augmentation tasks to taking on more strategic-level tasks with a higher workload volume; this move is advantageous because the vendor moves away from simply being a pair-of-hands to

being more engaged in the planning and execution of the work being completed. Additionally, the authors state that it is a good idea to move from time and materials-based contracts to fixed-price contracts with performance metrics; this model is advantageous because the risk is shifted from the onshore organization to the offshore vendor and they are paid based on the result and not the hours of effort required. Additionally, the authors stress the importance of good communication to overcome the geographical distance and time zone differences. The authors state that mature, successful relationships use a variety of communication methods such as face-to-face, email, and video conferencing.

St. John, J., Guynes, C. S., & Vedder, R. (2014). The client–vendor offshore relationship: Success factors. *Information Systems Management*, *31*(2), 120–125. doi:10.1080/10580530.2014.890429

Abstract. IT Offshoring has become a common strategic practice for many U.S. companies. Success offers access to technical expertise in emerging markets. This study recognizes the complexity of the IT offshoring relationship and examines social exchange factors difficult to address in contracts, and the relationship of these factors to a successful relationship. A recent survey of Fortune 500 CIOs found that a close relationship between client and vendor, characterized by trust and communication, is correlated with success.

Summary. The authors introduce their study by stating key statistics that exemplify the frequency of negative experiences when offshore outsourcing. According to this study, out of 25 large companies surveyed in a range of industries, 70 percent of the companies experienced negative outcomes in outsourcing contracts. The authors also highlight a 2005 industry report by Gartner Group that found approximately 80 percent of all

outsourcing contracts required re-negotiation. According to the authors, countries like Indian and China are further growing and fueling their growth in providing offshoring services to companies in other countries because of their continuous efforts to modernize their infrastructures and workforce to support outsourcing.

The authors present a study in which they surveyed Chief Information Officers (CIOs) from various Fortune 500 companies to examine client and vendor relationships in offshore contracts. The authors used the Social Exchange Theory (SET), defined as an examination of all human interaction as an exchange of both tangible and intangible benefits. The authors conclude that a lack of communication leads to a lack of trust and failure in the relationship and note that this breakdown in the relationship is a major cause of failure for offshoring. The most common reason they identified for the breakdown in communication was not having enough time to communicate effectively. Because communication and trust are highly correlated to success, the authors note that a common recommendation from relationship counselors is to communicate at least 10 minutes per day to prevent communication breakdowns.

Storti, C. (2015). *Speaking of India: Bridging the communication gap when working with Indians.* Boston, MA: Intercultural Press.

Abstract. Westerners and Indians are working more closely together and in greater numbers than ever before. The opportunities are vast, but so is the cultural divide. Misunderstandings and frustration due to cultural differences wreak havoc on success. In this revised edition of Speaking of India, author and intercultural communications expert Craig Storti attempts to ease the frustration, and bring cultural understanding in business and life.

Summary. Storti analyzes human behavior and culture to provide insight into how Westerners working with Indians can effectively communicate with their Indian colleagues. The author focuses on the differences between Indian and Western cultures to help identify potential misunderstandings; one key difference is that the overriding goal of the Indian-style of communication is to preserve and strengthen relationships while the overriding goal of Western-style communication is to exchange information.

The author suggests several behavioral changes that both Indians and Westerners can take to improve their working relationships. The author recommends that Westerners should seek out one-on-one conversations with their offshore counterparts and check for understanding, while Indians should be more transparent, communicate negative feedback if a request is not possible or a task is behind schedule, and speak their minds even when the message is negative. Additionally, the author stresses the need for overlapping work schedules to discuss high priority topics in real-time, rather than going back and forth via email. The author does note that work schedules rarely overlap between India and the U.S., and therefore it may be necessary to stagger work schedules by dedicating one or two days a week when people will come early or stay late. The author also suggests that the onshore staff visit the site in India to get to know the individuals and see their performance first hand; Storti asserts that this face-to-face interaction will help to foster better relationships between onshore and offshore teams. Additionally, the author suggests establishing weekly communications to enlighten the offshore team of events of which the offshore team may not be aware, which can be in the form of a weekly email summarizing the week's events.

This source is important to my study because many of the offshoring partnerships for American companies involve Indian teams. Understanding ways to more effectively

foster communication among American and Indian team members is important for leaders who hope to engage Indian teams in offshoring projects and American and Indian team members on these projects.

Toth, T. (2014). Trust in client-vendor relations: An empirical study of collaboration across national and organizational boundaries. In *Proceedings of the 5th ACM International Conference on Collaboration Across Boundaries: Culture, Distance & Technology* (pp. 5-14). New York, NY: Association for Computing Machinery. doi:10.1145/2631488.2631491

Abstract. In an ever more globalized world we are faced with the challenges of collaborating across geographical distance. This article examines how trust is established in an offshore outsourcing engagement of IT operations between a leading Danish media company and an Indian IT-service provider. The findings presented in this paper are a subset of a larger ethnographic research project including more than four hundred hours of participant observation and twenty-nine semi-structured interviews. Thus, the article contributes with a empirical investigation of collaboration across national and organizational boundaries within the field of IT offshore outsourcing. The article concludes that trust is primarily established when the teams are meeting face-to-face and in order to establish trust at a distance they are dependent on technology being readily available and on engaging in active trust building, by imitating the way they communicate face-to-face, when collaborating virtually.

Summary. The author introduces the increasing tendency for Western firms to outsource IT activities to Asia; he explains that successful outsourcing to Asia is dependent on the participant's ability to work in distributed teams. The author focuses his study on a specific case between a Danish media company outsourcing to an Indian IT service

provider. The research specifically addresses the challenges of communicating between offshore and onshore locations. Specific challenges the author addresses include knowledge gaps, which occur when there is a disconnect between the knowledge of the nearshore team and the offshore team, and a lack of transparency, which occurs when the client employees interact with the offshore vendor by using a service management system such as ServiceNow rather than working together in proximity. The author elaborates on other issues inherent in outsourcing to Asian teams, including physical distance and a lack of transparency between the onshore and offshore teams.

The author describes the importance of onshore and offshore counterparts establishing relationships and building trust. The author finds that developing rapport is an important factor when developing trust in business relationships, but notes that doing so is more difficult when working with virtual teams. For example, virtual meetings are different than meeting face-to-face because there is no opportunity to engage in small talk. Therefore, the author explains that to create this rapport, virtual teams should raise awareness of each other's presence by greeting each other similarly to how collocated teams greet each other when they enter the office in the morning or after lunch. For virtual teams, this communication can be accomplished through instant messenger (IM) and would help to build rapport, improve transparency and display the availability of resources.

Wibisono, Y., Govindaraju, R., Irianto, D., & Sudirman, I. (2019). Capabilities in managing offshore IT outsourcing challenges and the influence on outsourcing success from the IT vendor perspective. *International Journal of Technology, 10*(4), 841-853. doi:10.14716/ijtech.v10i4.885

Abstract. An IT vendor requires excellent capabilities to achieve success in offshore IT (information technology) outsourcing. This study aims to contribute to IT outsourcing research by identifying IT vendor capabilities from the perspective of offshore IT outsourcing challenges. A model is proposed that explains the relationship between capabilities in managing offshore IT outsourcing challenges (i.e., interaction capability, management capability, and capability to managing the distance involved) and the impact of these capabilities on outsourcing success. The proposed model is empirically tested by Partial Least Squares– Structural Equation Modelling (PLS-SEM) for validation, with 64 samples obtained from a survey of Indonesian IT vendors with experience in conducting offshore IT outsourcing projects. The results indicate that interaction capability consisting of communication and coordination has a positive impact on outsourcing success, and that this capability is in turn influenced by management capability. This includes management support, talent management and the ability to manage distances, in addition to cultural understanding and managing the temporal distance.

Summary. The authors identify the challenges associated with IT offshore outsourcing and examine the relationship between the ability of the IT vendor and the offshore outsourcing success. The authors identify the challenges with IT offshore outsourcing as an inability to manage and transfer knowledge, unclear requirements, and the inability to accurately communicate and coordinate. The authors classify the relationship between vendors and clients into two classifications: transactional relationships, which are based on a formal contract, and a partnership based on trust. The authors stress the importance that trust plays into building a successful offshore outsourcing relationship, which is accomplished by gaining the approval of upper management in supporting the outsourcing partnership.

This source is important to my study because it examines recommended guidelines to overcome the challenges with IT offshore outsourcing. These guidelines include utilizing trained offshore staff who possess superior knowledge, strong communication skills, and high motivation and who are dependable in fulfilling their IT offshore outsourcing assignments. The authors also state that in order to overcome cultural differences, the vendor should understand the client's culture to prevent communication issues. The authors assert that when there is a mutual cultural understanding, the vendor and client are able to align their values, ethics and business practices. The authors concluded that there is a significant positive relationship between strong interaction capabilities of vendors and clients and their outsourcing success.

Conclusion

This literature review includes the benefits, challenges and best practices IT organizations can utilize to effectively communicate with their offshore, outsourced teams. As the trend of outsourcing IT services from onshore to offshore continues to expand (Storti, 2015), more research is needed to successfully manage offshore partnerships (St. John et al., 2014). This study is focused on organizations based in the United States that choose to take advantage of the opportunities for IT offshoring that are increasing as emerging countries continue to enhance the education of their workforces and modernize their infrastructures (St. John et al., 2016).

Models of Offshore Outsourcing

Khan and Khan (2017) define offshore software development outsourcing (OSDO) as a model for developing high quality software at low cost, where the client organization contracts out all or part of the software development tasks to a vendor organization in a low-wage country. The two most common offshore software development business models include offshore outsourcing, which involves contracting services with an external organization that is located in a different country, and internal offshoring, which involves contracting with a wholly-owned subsidiary that is located in a different country (Prikladnicki & Audy, 2012). The disadvantages of internal offshoring include a higher cost when compared to offshore outsourcing and a slower response to change (Prikladnicki & Audy, 2012).

Another model of offshoring is nearshoring, the process of sourcing work to a foreign, lower-wage country that is relatively close in distance, time zone, or both (Carmel & Abbott, 2007). Nearshoring offers the benefits of offshoring while mitigating some of the challenges imposed by distance (Carmel & Abbott, 2007). The benefits of nearshoring include enabling easier access to visas, physical proximity, linguistic similarities, and time zone overlap (Carmel & Abbott, 2007).

Benefits and Challenges of Offshore Outsourcing

Offshore outsourcing allows organizations to focus on their core competencies while contracting with others who specialize in other necessary activities to exploit lower costs in foreign locations and become more profitable (Davis et al., 2006). To cut costs and improve efficiencies, many organizations outsource their IT functions to offshore locations (Djavanshir, 2005). Companies based in the U.S. can save up to 40 percent in IT operational expenses when compared to an operation based onshore (Djavanshir, 2005).

The most important benefits of offshore outsourcing include a labor cost reduction (Davis et al., 2006; Djavanshir, 2005; Prikladnicki et al., 2012; Simon et al., 2009), access to the host country's skilled workforce and talents (Djavanshir, 2005; Simon et al., 2009), follow-the-sun (24/7) continuous operation (Djavanshir, 2005), and improved flexibility and agility (Djavanshir, 2005; Simon et al., 2009). In the case of offshore outsourcing of software development, the less-expensive imported software can be knit together by people in the U.S. who are closer to the customers and can tailor the software to meet their business needs (Davis et al., 2006).

Despite the benefits of offshoring, many companies experience challenges with offshore outsourcing (Carmel & Abbott, 2007; Khan & Khan, 2017; Ramingwong & Sajeev, 2010; St. John et al., 2014). St. John et al. (2014) surveyed 25 large companies in a range of industries and found that 70 percent of the companies experienced negative outcomes in outsourcing contracts. St. John et al. (2014) cite a 2005 industry report by Gartner that found approximately 80 percent of all outsourcing contracts required re-negotiation.

Herath and Kishore (2009) note that offshoring IT functions comes with specific challenges, with the decision of what IT functions to outsource and the correct proportion of IT assets to outsource posing strategic challenges. Selecting the right vendor who has up-to-date

technical skills, is a good match for the client organization's culture, and has experience scoping similar projects can also be difficult (Herath & Kishore, 2009).

The distance between the onshore company and the offshore vendor introduces difficulties for distributed software development in many areas, including communication (Carmel & Abbott, 2007). According to the results of a survey that included the CIOs from various Fortune 500 companies, a lack of communication between the client and the offshore vendor leads to a lack of trust and failure in the relationship; this breakdown in the relationship is a major cause of failure for offshoring (St. John et al., 2014). The most common reason the survey respondents gave for the breakdown in communication was not having enough time to communicate effectively with their offshore outsourced vendors (St. John et al., 2014).

Vendor management for offshore distributed software development can also pose challenges (Carmel & Abbott, 2007; Herath & Kishore, 2009; Khan & Khan, 2017). Vendor management challenges include maintaining enough control and understanding the technologies the vendors use (Herath & Kishore, 2009). Davis et al. (2006) assert that managers of offshore IT vendors are responsible for gaining an awareness of the cultural and legal differences between the onshore and offshore countries and of the general risks associated with offshoring. Khan and Khan (2017) identify a lack of outsourcing relationship management as a key challenge in offshore endeavors.

Several authors noted the challenge that offshoring poses due to cultural differences between the onshore client and offshore vendor (Davis et al., 2006; Djavanshir, 2005; Khan & Khan, 2017; Ramingwong & Sajeev, 2010). Davis et al. (2006) note the challenges posed by cultural differences between onshore clients and offshore vendors that result in different expectations about key aspects such as quality, deadlines, and overtime. The differences in culture that arise in offshoring projects also increase the risk that organizations face of

experiencing the phenomenon of the mum effect, or “code of silence” (Ramingwong & Sajeev, 2010). This phenomenon occurs when a project stakeholder is aware of significant issues within the project, but remains silent (Ramingwong & Sajeev, 2010). Factors that lead to the mum effect include fear of consequences, communication gap, team solidarity that leads to a reluctance to complain, an imbalance of knowledge between teams, and organizational cultures that are influenced by different cultural dimensions (Ramingwong & Sajeev, 2010).

Lack of trust was another common offshoring issue noted by multiple authors (Carmel & Abbott, 2007; St. John et al., 2014; Toth, 2014). Carmel and Abbott (2007) acknowledge the challenge of building trust on distributed software development projects between onshore companies and distant offshore vendors. St. John et al. (2014) note that communication failures can prevent trust between onshore and offshore members. Toth (2014) stresses the challenge of establishing the rapport that is necessary to build trust when working with virtual teams.

Other challenges attributed to the distance between the onshore company and the offshore vendor for distributed software development are coordination and creating social bonds (Carmel & Abbott, 2007). Khan and Khan (2017) list a lack of project management, poor tools for monitoring computer systems, regulatory issues, and issues with language as key challenges in offshore software development outsourcing.

Best Practices and Tools for Offshore Outsourcing

Herath and Kishore (2009) provide advice on selecting offshore vendors and structuring the resulting contracts to reduce the risk of these business agreements. Organizations can use vertical *chunkification*, the process of outsourcing to a single vendor for a sole process, or horizontal chunkification, the practice of using multiple vendors to outsource the same business process or activity, to reduce risk by outsourcing service activities that can be disaggregated (Herath & Kishore, 2009). The overlapping that occurs with horizontal chunkification reduces the organization's strategic dependence on a single vendor (Herath & Kishore, 2009). Outsourcing organizations should also seek to move from time and materials-based contracts to fixed-price contracts with performance metrics; this model is advantageous because the risk is shifted from the onshore organization to the offshore vendor and offshore vendors are paid based on the result and not the hours of effort required (Simon et al., 2009).

Another method that organizations can employ to reduce the challenges with offshore outsourcing is to select a nearshore destination, which is an offshore vendor that meets the criteria of close physical proximity, time zone overlap, similar cultural characteristics, linguistic similarities, political or economic grouping, and some historical connections (Carmel & Abbott, 2007). If onshore and offshore engineers need to interact frequently, the convenience of close physical proximity and time zone overlap are critical to enable collaboration and overcome many communication and cultural challenges.

Herath and Kishore (2009) note the importance of selecting offshore vendors that are a good match for the onshore organization's culture. In order to overcome cultural differences between the onshore client and offshore vendor, Wibisono et al. (2019) recommend utilizing trained offshore staff who possess superior knowledge, strong communication skills, and high motivation and who are dependable in fulfilling their IT offshore outsourcing assignments. Davis

et al. (2006) recommend providing training to information systems managers who will be managing offshore teams to provide a better awareness of potential cultural issues and the means to address them.

Heesch (2015) and Storti (2105) both noted the importance of face-to-face meetings between the onshore and offshore team members to help develop strong relationships between the client and vendor team members. To break down barriers between onshore and offshore teams, (Heesch, 2015) recommends regularly enabling team members to travel across locations so that they are spending time together in person rather than virtually. Storti (2015) suggests that the onshore staff visit the offshore site to get to know the individuals and see their performance firsthand; he asserts that this face-to-face interaction will help to foster better relationships between onshore and offshore teams.

Multiple authors offered best practices to address communication issues between onshore clients and offshore vendors (Heesch, 2015; Huong et al., 2011; Kotlarsky et al., 2014; Ramingwong & Sajeev, 2010; Storti, 2015; Toth, 2014). Heesch (2015) recommends unifying teams and treating offshore and onshore teams as one team by communicating to the entire team rather than a subset as a means to break down barriers between offshore and onshore software development teams. Including team members from both shores in communications can be difficult since sharing information on the office floor may be more convenient; however, Heesch (2015) notes it is important for information to instead be shared on conference calls with both onshore and offshore teams participating.

Storti (2015) suggests establishing weekly communications to enlighten the offshore team of events of which the offshore team may not be aware, which can be in the form of a weekly email summarizing the week's events. Other communication interactions that onshore staff have with outsourced IT staff can be in the form of face-to-face communications, email,

instant message, or other web-based applications (Storti, 2015). Storti (2015) recommends that Westerners seek out one-on-one conversations with their offshore counterparts and check for understanding, while offshore staff should be more transparent, communicate negative feedback if a request is not possible or a task is behind schedule, and speak their minds even when the message is negative (Storti, 2015).

To overcome the special communication issue of the mum effect or code of silence, managers should encourage feedback from subordinates, offer anonymous communication channels, reduce power inequity, and increase awareness and understanding of each other's cultures (Ramingwong & Sajeev, 2010). In order to reduce power inequity, supervisors should encourage their staff to report problems and minimize autocratic management (Ramingwong & Sajeev, 2010).

To overcome communication challenges caused by work schedules between U.S. staff and their offshore outsourced counterparts that rarely overlap, (Storti, 2015) recommends staggering work schedules by dedicating one or two days a week when team members come in early or stay late. This overlapping of work schedules can be used to enable onshore and offshore team members to communicate frequently and discuss high priority topics in real-time, rather than going back and forth via email (Storti, 2015).

Knowledge transfer poses challenges between onshore and offshore teams, and multiple approaches to overcome these challenges were presented in the literature (Huong et al., 2011; Kotlarsky et al., 2014). Kotlarsky et al. (2014) conducted a case study of a large-scale outsourcing contract and discovered that codification of knowledge can help to support the transfer of knowledge between teams, which can be accomplished by implementing routine practices. Kotlarsky et al. (2014) concluded having the vendor document the knowledge of the client's staff into a meaningful language that vendor team members could understand helped to

overcome syntactic and semantic differences between the onshore and offshore team members. Huong et al. (2011) described a technique for knowledge transfer that was successfully employed by Japanese firms offshoring to Vietnamese vendors. The technique utilizes a Bridge Software Engineer (Bridge SE), whose role is to fill communication and cultural gaps, improve the business relationship between the client firm and vendor, and facilitate knowledge transfer (Huong et al., 2011). Huong et al. (2011) reported that the use of a Bridge SE was successful in improving communication and coordination by serving as a coordinator who mediates and enhances the relationship between the clients and service providers, thus facilitating the knowledge exchange process.

Toth (2014) notes the communication challenges that arise when rapport is not established between onshore and offshore teams. Developing rapport is important when developing trust in business relationships, but doing so is more difficult when working with virtual teams (Toth, 2014). For example, virtual meetings are different than meeting face-to-face because there is no opportunity to engage in small talk (Toth, 2014). Toth (2014) notes that organizations need to create rapport between onshore and offshore team members by raising awareness of each other's presence by greeting each other similarly to how collocated teams greet each other when they enter the office in the morning or after lunch. For virtual teams, this communication can be accomplished through instant messenger (IM) and can help to build rapport, improve transparency and display the availability of resources (Toth, 2014).

Final Thoughts

In summary, offshore outsourcing can be advantageous and allow organizations to focus on their core competencies while accessing skilled labor in foreign locations at a lower cost to become more profitable (Davis et al., 2006; Djavanshir, 2005; Herath et al., 2009; Prikladnicki et al., 2012). In order to realize the benefits of offshoring IT functions, organizations must understand how to address the challenges of sending IT work offshore (Djavanshir, 2005). The challenges and risks of offshore outsourcing can be addressed in a variety of ways, including utilizing cost-based contracts (Herath & Kishore, 2009), employing vertical or horizontal chunkification (Herath & Kishore, 2009), improving communication (Heesch, 2015; Huong et al., 2011; Kotlarsky et al., 2014; Ramingwong & Sajeev, 2010; Storti, 2015; Toth, 2014), and building trust (Toth, 2014). Understanding the challenges posed by the offshore outsourcing of IT functions and best practices to address the challenges will assist organizations in realizing the benefits of these business relationships.

References

Alavi, A., Struss, B., Chang, M., & Kim, J. (2004). IT offshoring: Economic and policy analysis. Retrieved October 11, 2019, from https://courses.cs.washington.edu/courses/csep590/04au/clearedprojects/Alavi.pdf.

Carmel, E., & Abbott, P. (2007). Why 'nearshore' means that distance matters. *Communications of the ACM*, *50*(10), 40-46. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.620.4579

Center for Public Issues Education. (2014). Evaluating information sources. University of Florida. Retrieved from http://www.piecenter.com/wp-content/uploads/2014/08/evaluateinfo.pdf

Davis, G. B., Ein-Dor, P., King, W. R., & Torkzadeh, R. (2006). IT offshoring: History, prospects and challenges. *Journal of the Association for Information Systems*, *7*(11), 770–795. ISSN:1536-9323

Djavanshir, G.R. (2005). Surveying the risks and benefits of IT outsourcing. *IT Professional*, *7*(6), 32-37. doi:10.1109/MITP.2005.153

Heesch, U. V. (2015). Collaboration patterns for offshore software development. In *Proceedings of the 20th European Conference on Pattern Languages of Programs*, (21), (pp. 1–10). doi:10.1145/2855321.2855343

Herath, T., & Kishore, R. (2009). Offshore outsourcing: Risks, challenges, and potential solutions. *Information Systems Management*, *26*(4), 312–326. doi:10.1080/10580530903245549

Huong, N. T., Katsuhiro, U., & Chi, D. H. (2011). Knowledge transfer in offshore outsourcing: A case study of Japanese and Vietnamese software companies. *Journal of Global Information Management, 19*(2), 27-44. doi:10.4018/jgim.2011040102

Khan, S. U., & Khan, A. W. (2017). Critical challenges in managing offshore software development outsourcing contract from vendors' perspectives. *The Institute of Engineering and Technology*, *11*(1), 1-11. doi:10.1049/iet-sen.2015.0080

Kotlarsky, J., Scarbrough, H., & Oshri, I. (2014). Coordinating expertise across knowledge boundaries in offshore-outsourcing projects: The role of codification. *MIS Quarterly, 38*(2), 607-A5. doi:10.25300/MISQ/2014/38.2.13

Levine, L. (2012, December 17). Offshoring (or offshore outsourcing) and job loss among U.S. workers. Retrieved June 10, 2019, from https://fas.org/sgp/crs/misc/RL32292.pdf

Prikladnicki, R., & Audy, J. N. (2012). Managing global software engineering: A comparative analysis of offshore outsourcing and the internal offshoring of software development. *Information Systems Management*, *29*(3), 216–232. doi:10.1080/10580530.2012.687313

Ramingwong, S., & Sajeev, A. S. M. (2010). Influence of culture on risks in offshore outsourcing of software projects: A quantitative study on mum effect. *2010 2nd IEEE International Conference on Information Management and Engineering* doi:10.1109/ICIME.2010.5478107

Simon, J., Poston, R., & Kettinger, B. (2009). Creating better governance of offshore services. *Information Systems Management*, *26*(2), 110–122. doi:10.1080/10580530902794778

St. John, J., Guynes, C. S., & Vedder, R. (2014). The client–vendor offshore relationship: Success factors. *Information Systems Management*, *31*(2), 120–125. doi:10.1080/10580530.2014.890429

St. John, J., Visinescu, L. L., Guynes, C. S., & Prybutok, V. R. (2016). Information and communication technology offshoring logistics success: A social exchange perspective. *Information Systems Management*, *33*(3), 212–230. doi:10.1080/10580530.2016.1188542

Storti, C. (2015). *Speaking of India: Bridging the communication gap when working with Indians.* Boston, MA: Intercultural Press.

Toth, T. (2014). Trust in client-vendor relations: An empirical study of collaboration across national and organizational boundaries. In *Proceedings of the 5th ACM International Conference on Collaboration Across Boundaries: Culture, Distance & Technology* (pp. 5-14). New York, NY: Association for Computing Machinery. doi:10.1145/2631488.2631491

Trickett, M. (2003). Chapter 2: Outsourcing models--costs, benefits and risks. In T. Cottam (Ed.), The practical guide to BSS and OSS outsourcing (p. 9). London, England: Chorleywood Consulting.

Wibisono, Y., Govindaraju, R., Irianto, D., & Sudirman, I. (2019). Capabilities in managing offshore IT outsourcing challenges and the influence on outsourcing success from the IT vendor perspective. *International Journal of Technology, 10*(4), 841-853. doi:10.14716/ijtech.v10i4.885