

2006

# Project management issues in IT offshore outsourcing

Kathy Schwaig  
*Kennesaw State University*

Stephen Gillam  
*Accenture*

Elke M. Leeds  
*Kennesaw State University, eleeds@kennesaw.edu*

Follow this and additional works at: <https://digitalcommons.kennesaw.edu/facpubs>

 Part of the [Business Administration, Management, and Operations Commons](#), [Organizational Behavior and Theory Commons](#), [Other Business Commons](#), and the [Technology and Innovation Commons](#)

---

## Recommended Citation

Schwaig, Kathy Stewart, Stephen H. Gillam, and Elke Leeds. "Project management issues in IT offshore outsourcing." *International Journal of e-Collaboration* 2.4 (2006): 53-73.

This Article is brought to you for free and open access by DigitalCommons@Kennesaw State University. It has been accepted for inclusion in Faculty Publications by an authorized administrator of DigitalCommons@Kennesaw State University. For more information, please contact [digitalcommons@kennesaw.edu](mailto:digitalcommons@kennesaw.edu).



# Project Management Issues in IT Offshore Outsourcing

*Kathy Stewart Schwaig, Kennesaw State University, USA*

*Stephen H. Gillam, Accenture, USA*

*Elke Leeds, Kennesaw State University, USA*

---

## ABSTRACT

*Global partnerships are forming to take advantage of the cost savings associated with offshoring as well as other strategic benefits. Not all information technology offshoring projects, however, are successful. Cost overruns, increased complexity and defective code cause organizations to rethink their offshoring strategy and their methods for managing these projects. In this paper, project management issues associated with offshore information technology outsourcing projects are identified and specific recommendations for addressing these issues are presented.*

*Keywords: IS project management methods and tools; IS risk management; outsourcing of IS*

---

## INTRODUCTION

Globalization, increased competition, shorter cycle times and an uncertain economic climate are the primary motivators for firms to reexamine traditional methods of delivering information technology (IT) based services and systems. Offshore IT outsourcing is an increasingly popular option for many firms as they transfer a wide array of software development and customer service applications to countries overseas (Misra, 2004). The rate of growth in the global IT outsourcing market is projected to grow at a compound annual

rate of 26%, increasing from \$10 billion in 2003 to an estimated \$31 billion in 2008. During the same period, savings in offshore projects are expected to increase from \$6.7 billion to \$20.9 billion (Behravesch & Klein, 2004). McKinsey & Company, for example,

the U.S. or the U.K. creates \$1.45 to \$1.47 of value, with an estimated \$1.12 reinvested back into the U.K. or U.S. and the rest going to the vendor country (Financial Times Limited, April 2005).

The dominant firms sending software development offshore are U.S. and Euro-

pean, and the typical offshore destinations are India, China, and the Philippines. Both sides of the list are expected to grow, however, as firms from more nations become involved (Kedia, Lahiri, & Lovvorn, 2005). Currently, India is projected to receive about 70% of the world's software and business process offshoring business while China, Ireland, Singapore, Mexico, and the Philippines comprise the rest (Bharadwaj, 2004).

Firms that offshore their IT processes expect to benefit from cost savings, access to highly skilled labor, increased quality and reduced development times (Bharadwaj, 2004). Based on the touted benefits and the expected growth in the offshoring market, it is clear that offshore IT outsourcing will increasingly become a part of an effective strategy for gaining and sustaining competitive advantage (Nair & Prasad, 2004; Kedia, Lahiri, & Lovvorn, 2005). Unfortunately, many offshore IT outsourcing projects to date have not delivered the projected costs savings and the expected strategic benefit (Saran, 2004). Traditional, "onshore" IT projects are replete with both management and technical complexities that challenge even the best project managers (McDonald, 2001). Geographic distance and cultural differences, among other factors, make managing offshore IT projects even more complex (Kliem, 2004; Laplante, Costello, Pawan, Sudi, & Landon, 2004).

Sound project management practices and techniques are crucial to delivering a successful offshore project. In fact, poor project management is one of the major causes of problems in IT offshore outsourcing efforts (Ante, 2004). A recent study of 101 CIOs involved in offshore IT projects found that their greatest challenges dealt with project management issues such as managing team communication, address-

ing cultural differences, specifying internal work processes, and developing internal management skills (Ware, 2003). Each challenge can impact the functionality and quality of offshore projects and ultimately eliminate any expected financial or competitive benefits.

In this paper, project management issues encountered in an IT offshoring context are discussed and suggestions for addressing these issues are presented. The paper is organized as follows: the next section provides an overview of outsourcing, IT outsourcing, and offshore IT outsourcing. In the following section, a discussion of IT project management is presented along with the framework used to evaluate project management issues in an offshore context. The section afterwards, discusses offshore IT outsourcing challenges related to each project management area and provides insights for addressing each issue. The last section concludes the paper with a discussion of the paper's contributions as well as recommendations for future research.

## **OVERVIEW OF OUTSOURCING, IT OUTSOURCING AND IT OFFSHORE OUTSOURCING**

### **Outsourcing**

The term *outsourcing* refers to the relationship between a vendor and a client in which the vendor is responsible for one or more of the client's processes or functions (Rajkumar & Mani, 2001). Theoretically, the outsourcing firm achieves economies of scale by spreading the fixed costs of performing the service or producing the product over their entire customer base (Ang & Straub, 1998). The client firm benefits from the vendor's expertise and

saves the production costs associated with developing the product or service. Added costs emerge, however, in that the client has to manage and coordinate the negotiation process as well as the relationship with the vendor during the life of the project. A tradeoff typically emerges in terms of production and coordination costs (Lacity & Hirschheim, 1993). As long as the coordination costs do not exceed the savings in production costs, the firm's cost saving goals are achieved. If the coordination costs exceed the production costs savings however, the client's overall costs of producing the product or providing the service are actually increased.

Additional forces beyond cost savings motivate firms to outsource certain parts of their business (Lacity & Hirschheim, 1993; Williams, 1997; Insinga & Werle, 2000). One major force has been the need for firms to focus on their core competencies; those key activities that the firm must do better than their competitors in order to effectively compete in the marketplace (Prahalad & Hamel, 1990; Lacity & Hirschheim, 1995). Firms using a core competency mindset assess whether or not a function or process is essential to their business. If the answer is "no", the activity is a candidate for outsourcing (Lokachari & Mohanarangan, 2001). Other forces driving firms toward outsourcing include access to scarce expertise or new technology and the need to have a scalable workforce (Lacity, Willcocks, & Feeny, 1996).

### **IT Outsourcing**

Firms have outsourced select information technology functions since the early 1960's when clients allowed vendors to process accounting applications such as payroll and accounts payable. Wide scale IT outsourcing, however, had its beginning in

late 1988 when Kodak engaged in a major outsourcing project (Lacity & Hirschheim, 1995). Using a core competency model, Kodak outsourced three components of its information technology division to three competing vendors, IBM, Businessland, and DEC. This event led to a *bandwagon effect* where hundreds of CEOs, dissatisfied with their IT department's failure to deliver quality systems on time and within budget, made similar decisions to outsource their IT functions (Fitzgerald & Willcocks, 1993). Since that time, much research has been conducted on the factors associated with successful IT outsourcing (Schary & Coakley, 1991; Fitzgerald & Willcocks, 1993; Hurley & Rundell, 1997; Lacity, Willcocks, & Feeny, 1996; Lacity & Willcocks, 1998; DiRomualdo & Gurbaxani, 1998; Grover, Teng, & Cheon, 1998; Willcocks & Lacity, 1998; Kern & Willcocks, 2002).

Even though the current trend in IT outsourcing began with Kodak in the late 1980's, two key transformations have occurred since that time (Qu & Brocklehurst, 2003). The first was a movement beyond outsourcing IT towards business process outsourcing such as customer service centers. The second transformation was the expansion of IT outsourcing from onshore to offshore (Qu & Brocklehurst, 2003).

### **Offshore IT Outsourcing**

Khan and Fitzgerald (2004) define offshore outsourcing as "an activity where client firms outsource IT activities to external service providers in other countries... and excludes the global internal subsidiaries of client firms" (p. 37). IT offshoring began in the early '90s when ERP implementations created a need for companies in developed countries to access talent in developing countries in order to shorten development time (Bharadwaj, 2004). In the late '90s,

Y2K and the booming e-commerce market greatly increased the need for IT professionals worldwide. The trend continued following the technology downturn in 2001. With the sluggish economy, firms continued to look for ways to cut cost while still delivering quality and timely IT projects (Bharadwaj, 2004).

More recently, interest in offshore IT outsourcing has increased dramatically (Khan & Fitzgerald, 2004). Vendors such as IBM, EDS, Computer Sciences Corporation (CSC), Accenture, and Affiliated Computer Services, Inc. offer offshore outsourcing options to their clients. As mentioned earlier, expected benefits include lower cost for IT application maintenance and software development, faster time to market, access to global expertise, better allocation of resources, increased throughput and fewer labor restrictions (Apte et al., 1997). Concerns regarding the risks of IT offshore outsourcing exist as well. A few of the challenges include effectively managing cultural differences across geographically dispersed teams, maintaining security of data and systems, compliance to regulatory mandates, saving morale of onshore staff, establishing and maintaining communications, selecting an offshore vendor, and negotiating and enforcing contracts across multiple legal and ethical systems (Kliem, 2004).

With the explosion in the IT outsourcing market in the past few years has come increased attention by the academic community. Some research focuses on the economic, social, and political impact of offshore outsourcing on specific countries such as the United States (Matloff, 2004), Indonesia (Setiadi & Kom, 2005) and India (Khan, Currie, Weerakkody, & Desai, 2002; Nair & Prasad, 2004; The Economist, 2005). One study analyzed

the software development strategies for implementing short-cycle-time software development within Russia (Pries-Heje, Baskerville, & Hansen, 2005). Other work identifies the benefits, risks and challenges of offshoring (Apte et al., 1997; Rajkumar & Dawley, 1997; Khan et al., 2002; Kliem, 2004). Case-based research investigates the business models pursued by different firms and provides comparative results across multiple projects (Khan & Fitzgerald, 2004; Beulen, van Fenema, & Currie, 2005). Finally, Misra (2004) advocates the use of metrics to assure that the goals of all parties involved in an IT offshore outsourcing project are met.

The following section discusses the discipline of project management and its importance in successful offshore IT outsourcing projects. In addition, the framework used in this paper for assessing current project management practices and issues in the offshore IT outsourcing context is presented.

## PROJECT MANAGEMENT

The history of project management crosses many disciplines and decades (Cleland, 2004). Project management is the application of expertise, skills, tools, and techniques to a set of interconnected activities in order to meet the requirements of the project (Grupe, Urwiler, Ramarapu, & Owrang, 1998). The goal of any project management effort is to manage the resources assimilated in such a way that the project is completed on time, within budget, and according to the functionality and quality expectations of the sponsor (McManus, 2004). Project management factors that lead to successful development and implementation of software have been identified (McConnell, 2001; Nidumolu & Subramani, 2003) as well as those factors

that pose risk (Keil, 1995; Wiegers, 1998; Chang & Christensen, 1999; Abdel-Hamid, 1999; Conradi, Nguyen, Wang, & Liu, 2000). Numerous formal project management methodologies exist and many IT organizations formulate their own project management approaches for delivering successful systems (Cantor, 1998; Meredith & Mantel, 2000).

Unfortunately, the failure rate of IT projects is somewhat legendary (Lyytinen & Hirschheim, 1987; Keil & Robey, 2001). In 2002 alone, over \$140 billion was lost on failed information technology projects (Larkowski, 2003). Over the past decade, the Standish Group published studies indicating that anywhere from 75% to 90% of IT projects are unsuccessful (Larkowski, 2003). Interestingly, research also indicates that the cause of failure is typically not attributed to the technology but rather to poor management (Keil & Montealegre, 2000). As the statistics indicate, managing traditional onshore IT projects presents challenges ranging from eliciting end user involvement to selecting and motivating a project team. The complexity of an offshore IT outsourcing project delivers many of the same challenges as well as new ones (Misra, 2004).

Some prior research exists examining project management issues in an IT offshore outsourcing context. Studies, for example, develop frameworks to help firms decide whether or not to outsource IT projects offshore and, if so, which locations are best (Smith, Mitra, & Narasimhan, 1996; Zatolyuk & Allgood, 2004; Nair & Prasad, 2004; Khan & Fitzgerald, 2004). Others examine the political reasons that offshore projects fail (Rost, 2004).

A few studies have looked specifically at managing the risks of offshore IT development projects. Kliem (2004), for ex-

ample, noted that the benefits of IT offshore outsourcing will not be realized unless the associated risks are identified and managed. He developed a framework of risks associated with offshored projects and a process for developing appropriate controls to address the risks. Similarly, Ramarapu and Parzinger (1997) discussed the complexity and risks associated with offshoring beyond traditional IT outsourcing and warned that benefits of reduce costs, improved quality, and economies of scale will not be realized without careful assessment of the issues associated with offshoring.

The Project Management Institute (PMI) is a professional organization focused on the needs of project management professionals worldwide and across multiple disciplines and industries including information technology. As an international professional organization, PMI is recognized for its Project Management Body of Knowledge (PMBOK), which identifies and synthesizes important literature and research on project management into a coherent set of principles and standards for professional certification in project management (Zanoni & Audy, 2004). The PMBOK focuses on best practices in nine key areas of a project: scope, procurement, communication, time, human resource, quality, cost, risk, and integration (Zanoni & Audy, 2004; Schwalbe, 2004). Project managers deploy tools, techniques, and management processes specific to each of the nine areas with the intent of directing their projects to successful completion.

No prior research, however, has used the PMBOK model as a tool for identifying areas of project exposure on IT offshore software development projects. This paper uses the nine areas of the PMBOK as a framework for assessing project management issues in an offshore IT outsourcing

context. While the PMBOK is one of many project management frameworks, it is used in the current study due to its simplicity and applicability to practice.

Table 1 presents and defines each PMBOK component. The following section identifies the offshore IT issues related to each PMBOK area and provides suggestions for addressing each issue.

## **PROJECT MANAGEMENT ISSUES IN AN OFFSHORE IT OUTSOURCING CONTEXT**

### **Scope Management**

Undertaking an offshore project involves considerable amounts of planning, coordination, and alignment with business strategy. Traditionally, a Work Breakdown Structure (WBS), identifying each unit of work required to complete a project, is constructed as one of the first steps in the project management process (Baar &

Jacobson, 2004). In offshore outsourcing, with its added geographic and cultural complexity, a complete understanding of scope and impact is required prior to WBS creation.

Simply locating some IT functions overseas does not ensure improved company performance and competitiveness in the long run. Managers must have a clear understanding of the objectives and goals of the offshore project and how they relate to the overall business strategy of the firm (Kedia, Lahiri, & Lovvorn, 2005). For the most part, firms engage in IT offshore outsourcing in order to meet strategic business objectives such as cost savings and faster time to market. In order for real value to emerge from the project, the IT planning process must be closely aligned with the strategic planning process of the firm. Offshore projects that are selected for implementation because they are closely aligned and linked to the objectives of the

*Table 1. The nine knowledge areas of the project management body of knowledge (Schwalbe, 2004)*

<b>Knowledge Area</b>	<b>Definition</b>
Scope Management	All processes involved in defining and controlling what is or is not included in a project.
Procurement Management	All processes required to acquire goods and services from an outside organization.
Communications Management	All processes required to ensure timely and appropriate generation, collection, dissemination, storage, and disposition of project information
Time Management	All processes required to ensure timely completion of a project.
Human Resource Management	All processes required to make the most effective use of all the people involved in a project.
Quality Management	All processes required to ensure that the project will satisfy the needs for which was undertaken.
Cost Management	All processes required to ensure that the project is completed within the approved budget.
Risk Management	All processes required to identify, analyze and respond to risk throughout the life of a project and in the best interests of achieving project objectives.
Integration Management	Includes the processes involved in coordinating all of the other project management knowledge areas.

business are much more likely to succeed (Straub, Weil, & Schwaig, 2004).

Critical in the scope planning and definition stage is the level of executive management support. Executive support is especially crucial in an offshore IT outsourcing project that has been identified as strategic for a firm and an enabler of competitive advantage. Most executives, unfortunately, have little or no exposure or experience with offshore IT outsourcing. Each offshore project needs an executive champion who will communicate the strategic and critical nature of the project throughout the organization and an executive sponsor who will assure adequate financial and human resources are available. These roles should be incorporated into the WBS to demonstrate firm commitment and executive management involvement. Strong executive support is essential to a successful, long-term offshore strategic initiative (Krell, 2004).

Executives and other supporters, however, should be cautious not to overstate the benefits of offshoring. Users and executive management may be too ambitious or optimistic in their appraisal of what an outsourcing arrangement can accomplish. In fact, inaccurate cost savings estimates are the primary reason why outsourcing arrangements are perceived as failures (Krell, 2004).

Identifying the scope of an offshore outsourcing project is key to answering the most important question regarding the decision to offshore or not: why do we want to offshore? Some firms choose to offshore processes that they see as non-core. Each business must evaluate its business model and judge whether or not offshoring all or part of their IT fits with their long-term strategy (Kedia, Lahiri, & Lovvorn, 2005).

## Procurement Management

The success of offshore IT outsourcing projects is largely dependent upon the relationship established with the vendor firm. Vendor selection, therefore, is extremely important (Ramarapu & Parzinger, 1997). Traditional IT vendor selection processes include the following steps: identify potential vendors, request solution and cost proposals from vendors, check client references, analyze vendor proposals including financials, and select a vendor. All of these steps are essential in selecting an offshore vendor as well, but a few additional issues are raised.

Before selecting a vendor, it is extremely important to clearly articulate *what* business processes will be outsourced offshore and *why* an offshore solution is appropriate. Answering these two questions guides downstream decision-making and helps structure the offshoring project. Business and IT managers must be able to link the offshore initiative to their overall business goals before they can fully address *how* to best offshore a function.

Several other issues must be addressed in the vendor selection process. First, the political and economic conditions of the offshore country must be assessed (Zatolyuk & Allgood, 2004; Nair & Prasad, 2004). Factors that should be understood include the judicial system, international trade laws, financial stability, labor laws, information privacy standards, software piracy laws, as well as the ability of law enforcement agencies to enforce regulations (Kliem, 2004).

Second, the foreign destination must have a stable and appropriate national infrastructure. Issues associated with infrastructure include bandwidth scalability, real estate cost, power availability and reliability, cost of living, transportation,

and degree of educated labor pool (Kliem, 2004).

Third, the client should assure that the vendor's goals, objectives, mission, and vision are consistent with its own. This is especially important if the client wants to sustain a long-term offshore relationship with the vendor. Switching vendors can be extremely costly especially in an offshore context. Assurance of the leadership and willingness of the vendor to adapt to the client's standards and processes, therefore, is extremely important.

Fourth, a detailed investigation of specific vendor processes and capabilities should be conducted. Issues such as their software development capacity (employee retention, turnover, skills) and maturity levels, technology infrastructure, conflict management process, project management capabilities, and redundancy plans should be assessed. The goal here is to assure that the vendor has the technology and management processes in place to assure business continuity.

Finally, special attention and detail should be given to the negotiation and contracting process. Contract terms should explicitly define financial commitments, payment methods, roles and responsibilities, schedules, quality, and functional expectations. Dispute management and early termination clauses should be clearly established. A firm must understand how different countries handle breaches of contract and criminal behavior. In the United States, for example, it is relatively easy to get an injunction. Canada and Ireland are similar to the U.S., while it is much harder in India and virtually impossible in China (Briggs, 2005). Ownership of information and software must be clearly stated in light of international intellectual property laws (Laplante et al., 2004). Increasingly

important is the security and privacy of information exchanged. Security practices related to data exchange, access, use, and storage must be established.

### **Communications Management**

Communications management in a project includes two related tasks: instituting and managing the reporting cycle, and managing and coordinating meetings with team members as well as upper management. As team members work on project deliverables, their progress must be monitored and controlled. A sound reporting cycle assures that team members and managers are aware of quality expectations and deliverable deadlines and also assures that accountability is assigned and problems are systematically addressed. Formal and informal meetings are used to report on deliverable progress, discuss project issues, resolve problems, and communicate any major or minor changes in the project. A major component of communications management is handling project documentation for all stages of the project.

Communication is made more complex in an offshore context due to dispersed team members, language, time zone, and cultural differences (Ramarapu & Parzinger, 1997, Kliem, 2004). Team members and management are typically located at both the client and vendor sites. Due to their remote geographic location, it is easy to exclude offshore team members from group meetings and communication. Special consideration must be made in order to prevent the organization from alienating the offshore IT members, which may result in poor decision-making and reduced productivity. It is equally important to prevent the offshore team from making decisions without the involvement of the onshore group. Management needs to be accessible

to both the onshore and the offshore associates, ensuring that everyone is receiving the same message, communication, and direction (Gilliard & Joharisen, 2004).

Cultural differences can also be seen in project communication. Generally, a U.S. worker is more likely to voice an opinion, ask questions, or offer suggestions. Some cultures, however, view a subordinate expressing their opinion as a sign of disrespect (Nicholls & Ellement, 1997). A project manager must understand this dynamic and manage it in a culturally appropriate manner (Kliem, 2004). While cultural differences and their impact on communication can be seen in an "onshore" project equally, the impact of cultural differences and lack of awareness may impact offshore projects more significantly.

Client and vendor management both must be kept informed about project progress. Advances in communication technologies such as e-mail, internet/intranet access, instant messenger, discussions/chat rooms, online/offline work, video-conferencing, and so forth, help to facilitate communication to team members as well as management (Chidambaram & Jones, 1993; Xue, Sankar, & Mbarika, 2005). While the technology is used to organize and send information, the message is actually communicated when it is interpreted by another person (Gilliard & Joharisen, 2004). The effect of cultural interpretation and norms, therefore, plays an important part in technologically based communication (Xue, Sankar, & Mbarika, 2005). Finally, during the contracting process with the vendor, it is imperative that the client and the vendor agree on the quantity and frequency of communication as well as on a standardized reporting procedure.

### **Time Management**

The use of offshore IT resources for project development activities can impact the timing of deliverables and the ultimate schedule of the project. Defining activities, estimating durations, and identifying sequencing relationships among activities, as well as monitoring and controlling the schedule, are more complicated when managing geographically dispersed project activities. Finely developed communication, coordination, and integration skills are essential in avoiding project cost and schedule overruns.

A major benefit of offshoring is the ability to perform project work on a 24x7 schedule. Some firms incorporate the "follow-the-sun" model in order to achieve round-the-clock development, management, and support (Edwards & Sridhar, 2005). The time difference can be a challenge in some cases and a real benefit in others. In a typical offshore situation, the IT resources may be located thousands of miles away and generally 9-12 hours apart. In this situation, a client development team can work all day and, while they are off work, another offshore team can continue the work from the point where the client team left off. This scenario allows for continuous development, reduces deployment time, increases throughput, and lowers cost in terms of faster time to market. Conversely, 24x7 development can add costs in terms of the increased need for coordination, communication, and control of the development environment (Dube & Pare, 2001).

Projects involving web hosting, design, and other internet-related work, are candidates for shorter cycle times. When a shorter cycle time is required, project managers must use more adaptive project management methodologies and techniques

(Pries-Heje, Baskerville, & Hansen, 2005). In other instances, such as the rollout of an enterprise resource planning system or a software migration, projects may take months or even years. Whether the cycle time is long or short, project managers on offshore projects must have a project management skill set flexible enough to adapt to the type of project they are leading.

### **Human Resource Management**

The offshore vendor team is the key to the overall success of the project and represents an extension of the client firm. As discussed earlier, communication and cultural challenges can make it difficult to achieve synergy between the domestic and remote teams. As a general guideline, one liaison from the onshore team should be present for every 20 members of the offshore team (Laplante et al., 2004). Other challenges include managing employee turnover, acquiring appropriate skills, sharing knowledge, and addressing cultural differences. Each is discussed below.

Employee turnover is one of the primary considerations in managing offshoring projects. Due to the aggressive growth of the offshoring industry overseas, the job market is extremely competitive with job turnover rates climbing as high as 35% in some countries (Overby, 2003). To guard against potential schedule delays and cost overruns, the client firm should closely assess the hiring, retention, and training strategies of the vendor firm prior to signing the contract. In addition, the project manager should ensure that the vendor has incorporated appropriate reward and incentives systems to reduce the risk of turnover. The initiating firm should communicate this directly to their internal human resources (HR) group and solicit involvement throughout the project.

Assessing employees' skills is challenging in the onshore realm. Transitioning the assessment to offshore vendor managed employees exponentially increases the difficulty. Because the outsourcing firm's business practices and methods may differ from the foreign country's practices, poorly developed and tested systems may result. The project manager must make sure, before the contract is signed, that the vendor can provide the technical and business talent necessary for a successful project.

Depending on the function being outsourced, the firm may require that the vendor establish a "captive data center" or "pavilion" staffed with fulltime employees who are dedicated 100% to the firm's outsourced function. This builds a knowledge base within the vendor's staff regarding the client's business and enables staff loyalty to the client.

Sometimes it is necessary to transfer employees between two teams either to facilitate training, convey team values, or to encourage knowledge sharing. Face-to-face meetings among members can benefit the project by increasing team cohesiveness and providing a shared understanding of project goals and deliverables (Hollingshead & McGrath, 1993). The trips, however, typically involve great distances, are expensive, and take a great deal of project time. Depending upon the length of stay, obtaining travel and work visas in the client country may also be a challenge. The U.S. government, for example, capped the number of H1B visas from 195,000 per year in 2002 to 65,000 per year in 2003. Traveling between locations can be complicated to manage and should be planned and organized well in advance.

Cultural differences can significantly influence the success or failure of an offshore IT project (Ramarapu & Parzinger,

1997). Project managers must be sensitive to differences in terms of vacation expectations, work ethic, holidays, religious observances, communication styles, and business methods. For example, during 2003, the Manilan president declared three additional holidays not originally on the calendar. Adjustments had to be made to work schedules and project timelines. In other cultures, it is typical for workers to take extended vacations at specific times of the year. The project manager who is unaware of these customs and who fails to incorporate them into the initial schedule will have to deal with project delays and cost overruns (Dube & Pare, 2001).

### Quality Management

Project quality management ensures that the project will meet functionality requirements and achieve the goals for which the project was originally undertaken. Quality management includes both quality assurance as well as quality control. Firms should have sound knowledge of their internal and external quality specifications prior to coordinating a quality guarantee with an offshore vendor.

Firms that outsource software development or programming to cut expenses often find that those savings never materialize due to poorly written and poorly tested code (Matloff, 2004). In some cases, firms had their own engineers rewrite the code from scratch. A recent study found that the median Indian project had 10% more code errors than did comparable U.S. projects (Ante, 2004).

To address this problem, it is crucial that clients select reliable and reputable vendors as well as implement a robust quality management plan on the client side. Details related to percentage error, applicability, and adherence to specifications will

benefit firms in terms of project success, vendor assessment, and contract renegotiation. Large providers that have proven themselves with other clients are typically less risky and more likely to deliver quality products. Checking customer references and software-certification levels is essential. For example, many offshore sites have Capability Maturity Model (CMM) certification, which recognizes process improvement and quality in software development environments. Firms choosing to outsource offshore should consider the compatibility of the vendor's CMM level to their own level of capability. A vendor operating at CMM level 5 may find it very difficult to service a client operating at level 1 or level 2. Conversely, client organizations should not rely solely on the vendor's CMM level when assessing quality. CMM assesses the outsourcer's management techniques, not the quality of their personnel or staff (Matloff, 2004). In India, for example, it is common to staff projects with young, inexperienced developers in order to control costs (Matloff, 2004). Clients must look at both the management processes in place to guide the project as well as the quality of their human resource processes. Stark differences may exist between the client and the vendor regarding their technical environments, their interpretation of quality, and development cultures causing additional project management challenges.

Firms must carefully choose which tasks and functions they move overseas. Tasks that involve repetition and predictability can be done effectively. Any function that requires strong specific language skills, in depth knowledge of a specific country's accounting rules or standards, or quick decision-making should be kept in the client's country (Ante, 2004).

Finally, an offshore vendor must have an extensive quality assurance process that effectively assesses the quality of all software products and applications. The vendor should demonstrate, through the software testing process, high standards of data integrity and security as well as functionality, performance, compatibility, and usability (Misra, 2004).

### **Cost Management**

Budget, or cost management, includes all the processes required to ensure that the project is completed within budget. During the planning phase, the costs of activities are estimated and the contract is structured (von Branconi & Loch, 2003). During project execution, actual costs are compared to budget, estimates are revised, and budgets updated.

The total cost of an IT outsourcing project often exceeds expectations. Most companies find that their first-year savings from offshore outsourcing is 15%-20%, significantly below the 50%-60% often touted (Krell, 2004). While savings of 30% or more on labor costs do materialize, other hidden costs often emerge. When firms outsource to India, for example, they typically pay \$8,000 to \$12,000 per employee for facilities, telecommunications, and the technology infrastructure (Krell, 2004). In addition, the client firm may need to invest in upgrading their own technology infrastructure in order to interact with the offshore firm. Relationship management costs are typically not figured into expected costs savings projections on the front end of the project and can add an additional 8% to overall project costs. Finally, the costs of terminating domestic employees, leases, supporting expatriates, and legal and consulting expenses should also be included in the overall costs (Krell, 2004). It is im-

perative that these issues are addressed in the contract negotiation phase, and that top management of both the client and vendor firms are involved.

### **Risk Management**

Project risk management involves identifying, analyzing and mitigating factors that could lead to project failure. Risks are inherent in any strategic business initiative but especially in those that involve two companies located in different geographical and political environments with diverse work forces (Beulen, van Fenema, & Currie, 2005; Briggs, 2005). Firms must have a risk management process that identifies those factors most likely to significantly and negatively impact the project, and have a plan to mitigate those risks (Kliem, 2004).

An overarching issue in managing risk is the level and degree of control that the client retains over its strategic business processes and the security of the data that supports these processes (Cocheo, 2004). Client organizations must assure that foreign operations are meeting the standards set by regulators in their own countries. For example, a Canadian bank that is offshoring development to India may need to embed an auditor in the foreign operation to assure that all Canadian banking regulations are met. In some cases, a firm may use *management interchanges* where a manager from the client facility spends time in the foreign facility to assure compliance with company standards and government regulations (Cocheo, 2004). In many regulated industries, compliance officers will want to make sure that adequate controls (technical, contractual, and procedural) are in place to assure the integrity of the data and accuracy of the development process. Assuring that the vendor has appropriate security

procedures including disaster recovery and backup plans in place is essential to assuring the security of the firm's data. Failure to demonstrate data protection can result in excessive non-compliance fines (Cocheo, 2004).

One of the major mechanisms for addressing risk is the contract between the client and the offshore firm. Contract negotiations can often become contentious as both sides flesh out all the terms and conditions of the deal. According to Krell (2004), the success of an IT outsourcing relationship depends on each party's ability to address three areas: complexity, governance and flexibility. Each is discussed below.

- **Complexity:** Negotiating large offshore outsourcing deals is multi-faceted and often results in detailed contracts 500-1,500 pages long. Because so much is at stake, inexperienced clients often need to hire specialists in the following areas: technology transaction outsourcing, employment and labor law, tax law, and real estate law.
- **Governance:** Failure to establish an appropriate governance structure poses the largest risk to a successful project. Too often, clients focus too much on vendor selection and not enough on monitoring service levels once the deal is in place. Typically, governance of offshoring projects involves a steering committee tasked with designing and implementing a conflict resolution process. Also, firms need to retain 7-12% of their displaced IT staff to manage the relationship with the vendor and to assist the organization with assimilating business process changes that result from moving large portions of

IT outside the organization (Krell, 2004).

- **Flexibility:** Organizations can undergo several rounds of strategic changes during the course of a multi-year offshoring agreement. Business and market forces cause firms to change their business strategies and objectives resulting in a need to reposition their existing offshoring arrangement. Clients need to build into their contract mechanisms for renegotiating or even terminating the relationship.

Managing these three primary risk factors is vital in assuring a successful IT offshore outsourcing project. Managers must continually balance the benefits of a project against its inherent risk (Kliem, 2004).

### Integration

The final project management area is integration, which deals with the manager's ability to coordinate and synchronize the many phases and processes of an IT project. Integration ensures that all aspects of the project are mutually intertwined and working together to achieve the project goals and objectives. This is especially critical in an IT offshore outsourcing context, where physical and cultural separation occurs between project components and isolation becomes an increased risk.

While integration is a separate area in the project management body of knowledge, properly managing integration on any IT project naturally encompasses the other eight areas. A change in scope, for example, should be accounted for and integrated into the project schedule, project budget, quality management plan, and risk management plan. Assuring that communication processes and control mechanisms are in place

to fully synchronize all the activities and issues in a project is the domain of project integration. Successful project integration is the domain of an experienced project manager that understands the complexities and connectedness of the environment in which they manage. Specific challenges associated with each of the other eight domains relate to the notion of integration, and since they have already been discussed, they will not be reiterated here.

### **Summary**

Project management issues associated with offshore information technology outsourcing projects have been presented. Table 2 summarizes the previous discussion by highlighting the challenges and the project management implications associated with each PMBOK area. The following section discusses the limitations and contributions of the current paper as well as recommendations for future research.

## **LIMITATION, CONTRIBUTIONS AND IMPLICATIONS FOR FUTURE RESEARCH**

### **Limitations**

While this paper makes some initial observations regarding project management issues in an IT offshore outsourcing context, some limitations of the work are noted. First, the PMBOK framework, while grounded in the practice of project management, is not strongly used in academic project management research. Second, the PMBOK framework is general and not exhaustive. All possible project management issues associated with IT offshore outsourcing are not identified with a cursory application of the framework. Finally, while the

current study integrates both practitioner and academic literature, the results are neither empirically derived nor examined. The paper, however, provides a great deal of foundational information and insights that can be used to formulate important research questions that can guide future empirical investigations. These research opportunities and the contributions of the paper are presented next.

### **Contributions and Future Research**

The research is useful to both practitioners and academicians alike. First, the PMBOK model has been shown to be an appropriate lens for examining IT offshore projects. A myriad of issues were identified and appropriate solutions were given. In the future, project managers can use the PMBOK framework to identify important issues in the context of their specific IT offshore project. In addition, the PMBOK framework is not country-specific. It can be applied across borders and across cultures. For academicians, the paper provides an impetus for future research into issues impacting the success of IT offshore projects. First, an empirical validation of the framework and its applicability in a variety of IT offshore outsourcing contexts is warranted. Second, research is needed to identify the "best practices" used by successful firms in terms of addressing issues in each of the nine PMBOK areas. Finally, research is needed to determine what organizational characteristics best influence successful project management of IT offshore projects.

### **CONCLUSION**

This paper used an existing project management framework in an effort to gain a better understanding of the project

Table 2. Project management implications of offshore IT outsourcing

Knowledge Area	Challenge	PM Implications
Scope Management	<ul style="list-style-type: none"> <li>What are the strategic and organizational benefits of engaging in a specific IT outsourcing project?</li> </ul>	<ul style="list-style-type: none"> <li>Link IT offshore outsourcing to strategic objectives of the firm</li> <li>Articulate why an offshore solution is appropriate</li> <li>Assure strong and effective executive management involvement</li> <li>Adopt realistic expectations for offshore IT outsourcing success</li> </ul>
Procurement Management	<ul style="list-style-type: none"> <li>Given the political, social, and cultural complications associated with IT offshore outsourcing, how does the firm identify, select and contract with the best vendor for a specific project?</li> </ul>	<ul style="list-style-type: none"> <li>Understand the vendor's socio-political climate, legal and criminal system, national infrastructure, and privacy and data protection standards</li> <li>Articulate a consistent mission, vision, and objective with vendor management</li> <li>Negotiate a flexible contract</li> </ul>
Communications Management	<ul style="list-style-type: none"> <li>How are the cultural, language, and technology barriers addressed in order to insure effective and productive communications in a largely virtual environment?</li> </ul>	<ul style="list-style-type: none"> <li>Establish specific communication processes that address cultural and language differences</li> <li>Clearly state communication procedures and vehicles</li> <li>Include both onshore and offshore team members in communications processes</li> </ul>
Time Management	<ul style="list-style-type: none"> <li>How is the time difference managed in a way that positively impacts the project schedule as well minimizes coordination costs?</li> </ul>	<ul style="list-style-type: none"> <li>Recognize the benefits and risks associated with time zone differences</li> <li>Prepare for the increased need and costs for coordination, communication, and control</li> </ul>
Human Resource Management	<ul style="list-style-type: none"> <li>How can a client assure that the best employees are assigned to their project and that vendor employee turnover is managed?</li> </ul>	<ul style="list-style-type: none"> <li>Employ appropriate client to vendor ratios</li> <li>Assess the quality of the work environment, pay scale, etc to assure that vendor retention rates are being managed.</li> <li>Monitor the skill sets of offshore employees assigned to your projects</li> </ul>
Quality Management	<ul style="list-style-type: none"> <li>How is quality management and control addressed in an offshore project given the geographic distance?</li> </ul>	<ul style="list-style-type: none"> <li>Assess the quality of the offshore vendor's development processes and its fit with your environment.</li> <li>Establish realistic mechanisms for assessing quality</li> <li>Offshore only those tasks that are appropriate for a given vendor</li> </ul>
Cost Management	<ul style="list-style-type: none"> <li>What mechanisms are used to assure that realistic costs savings are achieved and that coordination costs are minimized?</li> </ul>	<ul style="list-style-type: none"> <li>Conduct financial feasibility studies that realistically estimate cost savings</li> <li>Anticipate additional costs associated with the project (i.e. upgrading communications infrastructure)</li> </ul>

*(continued on the next page)*

Table 2. Project management implications of offshore IT outsourcing (cont.)

Knowledge Area	Challenge	PM Implications
Risk Management	<ul style="list-style-type: none"> <li>How are risks addressed in an IT offshoring project?</li> </ul>	<ul style="list-style-type: none"> <li>Implement a risk management process that identifies, analyzes and mitigates risks associated with offshoring</li> <li>Establish governance mechanisms that control and monitor the offshoring relationship</li> <li>Hire specialist to address risks specific to a certain technology, vendor, or country</li> <li>Contract for renegotiation and termination clauses</li> </ul>
Integration Management	<ul style="list-style-type: none"> <li>How do changes in one aspect of a project impact other aspects?</li> </ul>	<ul style="list-style-type: none"> <li>Coordinate and synchronize the various phases and components of the project</li> <li>Employ experienced project managers on more complex offshore projects</li> <li>Respond to changes in the project environment by addressing multiple issues in a synergistic and consistent manner</li> </ul>

management issues associated with an IT offshore outsourcing project. Most firms want the results of their offshore outsourcing effort to appear seamless and transparent to those ultimately impacted by the project, while simultaneously reaping potential cost savings and strategic benefits. Yet despite the potential benefits, IT offshoring projects face all of the same challenges and risks of onshore projects as well as some very unique challenges due to geographical, cultural and social differences. Project managers must recognize that offshore IT projects need to be managed with these special challenges in mind. Otherwise, the potential savings and strategic benefit of offshoring will not be realized and the chance of failure will increase.

## REFERENCES

- Abdel-Hamid, T. K. (1999). The impact of goals on software project management: An experimental investigation. *MIS Quarterly*, 23(4), 531.
- Ang, S., & Straub D. W. (1998). Production and transaction economies and IS outsourcing: A study of the U.S. Banking Industry. *MIS Quarterly*, 22(4), 535.
- Ante, S. (2004). Shifting work offshore? Outsourcer beware; quality and security woes can eat expected savings. *Business Week*, No. 3865, p. 36.
- Apte, U. M., Sobal, M. G., Hanaoka, S., Shimada, T., Saarinen, T., & Versalainen, A. P. J. (1997). IS outsourcing practices in the USA, Japan, & Finland: A comparative study. *Journal of Information Technology*, 12, 289.
- Baar, J. E., & Jacobson, S. M. (2004). The keys to forecasting — Work breakdown structure. *Cost Engineering*, 46(3), 12.
- Behraves, N., & Klein, L. (2004). *The comprehensive impact of offshore IT software and services outsourcing on*

- the U.S. economy and the IT industry.* Report prepared by Global Insight of the Information Technology Association of America. Arlington, VA.
- Beulen, E., van Fenema, P., & Currie, W. (2005). From application outsourcing to infrastructure management: Extending the offshore outsourcing service provider. *European Management Journal, 23*(2), 133.
- Bharadwaj, S. S. (2004). Offshore outsourcing: Path to new efficiencies in IT and business processes. *Journal of Information Technology Cases and Applications, 6*(3), 55.
- Briggs, B. (2005). Offshore outsourcing poses risks. *Health Data Management, 13*(2), 68.
- Cantor, M. R. (1998). *Object-oriented project management with UML*. Wiley Computer Publishing.
- Chang, C. K., & Christensen, M. (1999). A net practice for software project management. *IEEE Software, 16*(6), 80.
- Chidambaram, L., & Jones, B. (1993). Impact of communication medium and computer support on group perceptions and performance: A comparison of face-to-face and dispersed meetings. *MIS Quarterly Executive, 17*(4), 465.
- Cleland, D. I. (2004). The evolution of project management. *IEEE Transactions on Engineering Management, 51*(4), 396.
- Cocheo, S. (2004, May). Regulators keep a risk-based eye on offshore outsourcing. *ABA Banking Journal*, p. 64.
- Conradi, R., Nguyen, M. N., Wang, A. I., Liu, C. (2000). Planning support to software process evolution. *International Journal of SEKE, 10*(1), 31.
- DiRomualdo, A., & Gurbaxani, V. (1998). Strategic intent for IT outsourcing. *Sloan Management Review, 39*(4), 67.
- Dube, L., & Pare, G. (2001). Global virtual teams. *Communications of the ACM, 44*(12), 71.
- The Economist*. (2005). Special report: The Bangalore paradox — Outsourcing and IT in India: India's IT and outsourcing industries. *The Economist, 375*(8423), 82.
- Edwards, H. K., & Sridhar, V. (2005). Analysis of software requirements engineering exercises in a global virtual team setup. *Journal of Global Information Management, 13*(2), 21.
- Financial Times Limited. (2005). Special reports: Outsourcing — Making offshoring happen. *Accountancy, 135*(1340), 55.
- Fitzgerald, G., & Willcocks, L. (1993). *Information technology outsourcing practice: A U.K. survey*. London: Business Intelligence.
- Gillard, S., & Joharisen, J. (2004). Project management communication: A systems approach. *Journal of Information Science, 30*(1), 23.
- Grover, V., Teng, J., & Cheon, M. J. (1998). Towards a theoretically-based model of information systems outsourcing. In L. P. Willcocks, & M. Lacity (Eds.), *Strategic source of information systems: Perspective and practices*. New York: Wiley.
- Grupe, F. H., Urwiler, R., Ramarapu, N. K., & Owrang, M. (1998). The application of case-based reasoning to the software development process. *Information and Software Technology, 40*(9), 493.
- Hollingshead, A. B. & McGrath, J. E. (1993). Group task performance and communication technology. *Small*

- Group Research*, 24(3), 307.
- Hurley, M., & Rundell, J. (1997). *The IT outsourcing imperative: Intelligently managing the inevitable decision* (KPMG Report). Australia.
- Insinga, R. C., & Werle, M. J. (2000). Linking outsourcing to business strategy. *Academy of Management Executive*, 14(4), 59.
- Kedia, B., Lahiri, S., & Lovvorn, A. (2005). Seeking competitive advantage on distant shores. *European Business Forum*, 21, 37.
- Keil, M. (1995). Pulling the plug: Software project management and the problem of project escalation. *MIS Quarterly*, 19(4), 421.
- Keil, M., & Robey D (2001). Blowing the whistle on troubled software projects. *Communications of the ACM*, 44(4), 87.
- Keil, M., & Montealegre, R. (2000, Spring). Cutting your losses: Extricating your organization when big project goes awry. *Sloan Management Review*, 396-311, 55.
- Kern, T., & Willcocks, L. P. (2002). Service provision and the net: Risky application sourcing? In R. Hirschheim, A. Heinzl, & J. Dibbern (Eds.). *Information systems outsourcing: Enduring themes, emergent patterns, and future directions*. Heidelberg: Springer
- Khan, N., Currie, W. L., Weerakkody, V., & Desai, B., (2002). Evaluating offshore IT outsourcing in India: Supplier and customer scenarios. In *IEEE Proceedings of the 36<sup>th</sup> Hawaii International Conference on System Sciences*.
- Khan N., & Fitzgerald (2004). Dimensions of offshore outsourcing business models. *Journal of Information Technology Cases and Applications*, 6(3), 35.
- Kliem, R. (2004). Managing the risks of offshore IT development projects. *Information Systems Management*, 21(3), 6.
- Krell, E. (2004). The total cost of IT outsourcing. *Business Finance Magazine*, 10(3), 48.
- Lacity, M., & Hirschheim R. (1993). *Information systems outsourcing myths, metaphors, and realities*. New York: John Wiley.
- Lacity, M., & Hirschheim, R. (1995). *Beyond the information systems outsourcing bandwagon: The insourcing response*. Chichester: John Wiley.
- Lacity, M. C., & Willcocks, L.P. (1998). An empirical investigation of information technology sourcing practices: Lessons from experience. *MIS Quarterly*, 22, 363.
- Lacity, M. C., Willcocks, L. P., & Feeny, D. F. (1996). The value of selective IT sourcing. *Sloan Management Review*, 37(3), 13.
- Laplante, P. A., Costello, T., Pawan, S., Sudi, B., & Landon, M. (2004). The who, what, why, where, and when of IT outsourcing. *IT Professional*, 6(1), 19.
- Larkowski, K. (2003). *Latest Standish Group CHAOS report shows that projects success rates have improved by 50%*. West Yarmouth, MA: Standish Group International.
- Lokachari, P. S., & Mohanarangan, M. (2001). Outsourcing of information technology services: A decision-making framework. In *Proceedings of the Portland International Conference on Management of Engineering and Technology (PICMET)* (Vol. 1, p. 411).
- Lyytinen, K., & Hirschheim, R. (1987). Information systems failures — A

- survey and classification of the empirical literature. In *Oxford Surveys in Information Technology*. Oxford University Press.
- Matloff, N. (2004). Globalization and the American IT worker. *Communications of the ACM*, 47(11), 27.
- McConnell, S. (2001). Common sense. *IEEE Software*, 18(4), 5.
- McDonald, J. (2001). Why is software project management difficult? And what that implies for teaching software project management. *Computer Science Education*, 11(1), 55.
- McManus, J. (2004). A stakeholder perspective in software project management. *Management Services*, 48(5), 8.
- Meredith, J. R., & Mantel, S. J. (2000). *Project management: A managerial approach* (4th ed.). New York: John Wiley & Sons.
- META Group, Inc. (2003). Retrieved from <http://www.metagroup.com>
- Misra, R. B. (2004). Global IT outsourcing: Metrics for success of all parties. *Journal of Information Technology Cases and Applications*, 6(3), 21.
- Nair, K. G. K., & Prasad, P. N. (2004, Summer). Offshore outsourcing: A SWOT analysis of a state in India. *Information Systems Journal*, p. 34.
- Nicholls, C., & Ellement, G. (1997). *Ellen Moore (A): Living and working in Korea* (Richard Ivey School of Business Case #9A97G029) (p. 1-20). Richard Ivey School of Business.
- Nidumolu, S. R., & Subramani, M. R. (2003). The matrix of control: Combining process and structure approaches to managing software development. *Journal of Management Information Systems*, 20, 159.
- Overby, S. (2003). Bringing I.T. back home. *CIO*.
- Prahalad, C. K., & Hamel, G. (1990). The core competence of the corporation. *Harvard Business Review*, 68(3), 79.
- Pries-Heje, J., Baskerville, R., & Hansen, G. I., (2005). Strategy models for enabling offshore outsourcing: Russian short-cycle-time software development. *Information Technology for Development*, 11(1), 5.
- Qu, Z., & Brocklehurst, M. (2003). What will it take for China to become a competitive force in offshore outsourcing? An analysis of the role of transaction costs in supplier selection. *Journal of Information Technology*, 18, 53.
- Rajkumar, T. M., & Dawley, D. L. (1997). Problems and issues in offshore development of software. In *Strategic sourcing of information systems: Perspectives and practices* (pp. 369-386). John Wiley & Sons.
- Rajkumar, T. M., & Mani, R. V. S. (2001). Offshore software development: The view from Indian suppliers. *Information Systems Management*, 63-73
- Ramarapu, N., & Parzinger, M. J. (1997). Issues in foreign outsourcing. *Information Systems Management*, 14(2), 27.
- Rost, J. (2004). Political reasons for failed software projects. *IEEE Software*, 21(6), 104.
- Saran, C. (2004). Badly-managed offshore software development costs firms millions. *Computer Weekly*, p. 5.
- Schary, P. B., & Coakley, J. (1991). Logistics organization and the information system. *International Journal of Logistics Management*, 2(2), 22.
- Schwalbe, K. (2004). *Information technology project management*. Boston: Thomson Learning.
- Setiadi, R., & Kom, S. (2005, February

- 16). Implementing IT outsourcing in Indonesia: A smart decision or a big mistake. In *Proceedings of Issues and Challenges in Global Development Conference*, The University of Melbourne, Victoria, Australia.
- Smith, M. A., Mitra, S., & Narasimhan, S. (1996). Offshore outsourcing of software development and maintenance. *Information and Management*, 31(3), 165.
- Straub, D., Weil, P., & Schwaig, K. S. (2004). *Strategy and the control of the IT resource: A test of the strategic control model*. Working Paper Series, Georgia State University.
- von Branconi, C., & Loch, C. H. (2004). Contracting for major projects: Eight business levers for top management. *International Journal of Project Management*, 22, 119.
- Ware, L. (2003). Weighing the benefits of offshore outsourcing. *CIO.com*. Retrieved from <http://www.cio.com>
- Wieggers, K. (1998). Know your enemy: Software risk management. *Software Development*, 6(10), 38.
- Williams, K. (1997). Has your company outsourced yet? *Management Accounting*, 78(9), 14.
- Willcocks, L., & Lacity, M. (1998). *Strategic sourcing of information systems: Perspectives and practices*. New York: John Wiley & Sons.
- Xue, Y., Sankar, C. S., & Mbarika, V. W. A. (2005). Information technology outsourcing and virtual team. *The Journal of Computer Information Systems*, 45(2), 9.
- Zanoni, R., & Audy, J. (2004). Project management model: Proposal for performance in a physically distributed software development environment. *Engineering Management Journal*, 16(2), 28.
- Zatolyuk, S., & Allgood, B. (2004). Evaluating a country for offshore outsourcing: Software development providers in the Ukraine. *Information System Journal*, 28.

*Dr. Schwaig is an associate professor of information systems at Kennesaw State University where she teaches graduate and undergraduate courses in information systems. Her research interests include information privacy, outsourcing, project management, knowledge management and electronic commerce. She also serves as a business consultant in information systems strategy. Dr. Schwaig has published in the Communications of the ACM, The Journal of Management Information Systems, DATABASE, Information and Organization, and Information Systems Research, among others.*

*Stephen H. Gillam is a manager with Accenture ([www.accenture.com](http://www.accenture.com)) in Atlanta, GA. He is responsible for building long-term partnerships with clients through the management of their business operations, such as IT, HR, Finance, and Accounting. He has spent the last nine years*

*with Accenture overseeing the design, build, and run components of multiple applications. More recently, Mr. Gillam has focused on global outsourcing, application management transitioning, contract and service level management, integration of Accenture's strategic delivery model, and the general operations of Accenture's PeopleSoft Delivery Center in Atlanta. Mr. Gillam has a bachelor of science in industrial engineering from the University of Tennessee and a masters in business administration from Kennesaw State University.*

*Elke Leeds is an instructor of information systems at Kennesaw State University. She is a course manager for undergraduate information systems, full time instructor, actively involved in new technology construction projects, and technology integrated curriculum. Her research interests include digital video presentation outsourcing, curriculum integration, and information system embedded strategic management.*