

PAST, PRESENT AND FUTURE OF INFORMATION SYSTEMS OFFSHORING: A META ANALYSIS AND REVIEW

Haried, Peter

University of Wisconsin-La Crosse

Hua Dai

University of Wisconsin-La Crosse

ABSTRACT

In response to the growing academic, social and practitioner interest in the information systems (IS) offshoring phenomenon, there is a direct need to develop and assess the research activities conducted to date. Given the growing and sustained interest a wide variety of research has taken place to study the various issues surrounding IS offshoring. In this article, we conduct a meta analysis over the 2000-2010 time period to examine the status of IS offshoring research across twelve leading academic journals in the areas of IS and management. Our findings compare research methodologies applied, client vs. vendor perspectives studied and IS offshoring sub-topics investigated. Interesting results emerge in the range of research methodologies, subject area categories and trends across IS offshoring research articles. A framework is presented for categorizing the past, assessing the present and suggesting future directions for IS offshoring research.

INTRODUCTION

Information systems (IS) offshoring has emerged as a significant sourcing option. Technological advances combined with increased globalization and competitive pressures have forced many firms to consider IS offshoring as a sourcing alternative to reduce organizational cost, and at the same time create and/or maintain their competitive advantage in the global marketplace. Increasingly, the phenomenon of IS offshoring has been considered by many firms as a sourcing solution for their IS needs. Recent estimates put the global IS offshore sourcing market at over \$55 billion for 2008 and some estimates suggest an annual growth rate of 20% over the next five years (Oshri, Kotlarsky and Willcocks, 2009). Clearly with this greater reliance and predicted growth in IS offshoring, there is a significant need for academic researchers to learn from past research, assess the present state of IS offshoring research and plan future research directions to support and address the predicted growth of IS offshoring.

Evidence of the increased interest and significance of IS offshoring is demonstrated by the number of academic research articles directly addressing the offshoring topic, along with entire special issues dedicated to the topic (MISQ 2008). This increased interest demonstrated in

recent years has contributed to our reason to investigate and reflect on what is known about IS offshoring. As a result of the growing academic, social and practitioner interest in the field of IS offshoring, there is a significant need to do a comprehensive assessment of research activities that have been conducted. Our aim in this article is to address this call by exploring and synthesizing the published IS offshoring literature. The article seeks to answer questions such as: “What research methods are commonly used to study IS offshoring?”, “What are the dominant topics addressed by IS offshoring research?”, and “What are the trends and opportunities for future IS offshoring research?” In sum, the goal and objective of this article is to address and reflect on the past, present and future of IS offshoring research.

Meta analysis has served as a valuable tool in determining where we are moving as researchers in information systems (i.e., Palvia, Leary, Mao, Midha, Pinjani and Salam, 2004). Although previous meta analysis’ have been conducted specifically on outsourcing (Dibbern, Goles, Hirschheim, and Jayatilaka, 2004; Gonzalez, Gasco, and Llopis, 2006; Yadav and Gupta, 2008), no literature review has been performed specifically on the IS offshoring area. The maturity of the IS offshoring field along with the increased number of publications dedicated to IS offshoring in recent years contributed to our motivation to investigate and reflect on what is known about IS offshoring. This study aims to make a contribution to signifying the philosophical and methodological approaches conducted regarding IS offshoring. The research also presents a comparative analysis among the leading IS journals reviewed. The focus of this article is to highlight the IS offshoring subject areas investigated and the research methodologies employed during the time period of 2000-2010.

From our review of the literature, we feel that the IS offshoring phenomenon has matured into its own subject field and is a viable IS sourcing solution that is differentiated from traditional outsourcing. IS offshoring is differentiated from IS outsourcing by expanding the traditional definition of outsourcing to include location. In IS offshoring the third party vendor firm providing the IS products and services to the client firm is located outside of the client firm’s home country (for example, a client located in the U.S.A. utilizing a vendor located offshore in India). The vendor’s offshore location allows the client firm purchasing the IS products and services to take advantage of the inherent lower cost international labor arbitrage (King, 2008). Location contributes to a number of the differences or challenges associated with IS offshoring, including: cultural differences, time zone differences, communication challenges, etc. Thus, IS offshoring has unique factors that distinguishes itself from traditional outsourcing that are apparent when analyzing the growing body of IS offshoring research.

The remainder of the paper is organized as follows. The next section discusses our methodology for collecting and analyzing the IS offshoring articles. Section three discusses the results describing the research methodologies applied, subject matters addressed and trends in regards to IS offshoring research. Section four presents implications and future research directions. Section five summarizes and concludes the study’s main findings.

METHODOLOGY

In order to capture and analyze the past, present and future of IS offshoring research, an extensive meta analysis was conducted for this study. In total, 70 articles from leading IS and management academic journals were selected and reviewed (Table 1). Articles published in the journals over the time period of 2000-2010 were coded to analyze the state of IS offshoring research. The rationale behind investigating the last 10 years is that this time frame includes the start of the IS offshoring phenomenon to the current time frame. The selected academic journals were consistent with previous studies (Dibbern et al., 2004; Gonzalez et al., 2006; Yadav and Gupta,

2008) which are all recognized for their excellence in the IS field. Our decision to focus our study on articles published, and not books or conference proceedings was influenced by the higher prestige typically placed on journal article publications in the IS discipline. Additionally, our selection is based on the belief that practitioners and academics prefer to use journal publications to acquire and disseminate new knowledge (Donahue and Fox, 2000; Nord and Nord, 1995). It should be noted however, that conferences such as ICIS, AMCIS and HICSS are of high importance and highly respected in the IS field.

After the twelve journals were identified, the researchers searched for, collected and reviewed offshoring articles published over the 2000-2010 time period. Both authors coded the articles together to achieve a common understanding and inter-rater reliability. The ABI and Proquest databases were searched using the keywords of: IS offshoring, offshoring, offshore, and global sourcing without limiting the search to abstracts, keywords or title inclusion. Each article match was reviewed with the objective of identifying the IS offshoring topic, client vs. vendor perspective, and methodology applied.

RESULTS

This article reviewed the state of IS offshoring by examining the research methodologies, IS offshore topic areas, client vs. vendor perspectives, and the scope of IS activities offshored. In total 70 articles were reviewed across twelve leading IS and management journals within the 2000-2010 timeframe. Overall, it can be observed in Table 1 that *MIS Quarterly* is the journal that has published the most IS offshoring articles (14), followed by *Communications of the ACM* with 11 publications. Out of the reviewed journals, *European Journal of Information Systems* had the fewest IS offshoring publications with no publications specifically discussing the IS offshoring topic.

Journal Name	Number of Articles (2000-2010)
<i>MIS Quarterly</i>	14
<i>Communications of the ACM</i>	11
<i>Information System Research</i>	8
<i>Information & Management</i>	7
<i>Decision Science</i>	6
<i>Information Systems Frontiers</i>	6
<i>Journal of Management Information Systems</i>	5
<i>European Management Journal</i>	4
<i>Journal of Computer Information Systems</i>	3
<i>Management Science</i>	2
<i>Journal of the Association for Information Systems</i>	2
<i>Decision Support Systems</i>	2
<i>European Journal of Information Systems</i>	0
Total	70

Table 1: IS Offshoring Articles Reviewed

Research Methodologies

For all articles reviewed, we captured the research methodology applied within each article. In this paper we followed the definition that a research methodology may be viewed as the "overall process guiding the entire research project" and is viewed as the "primary evidence generation mechanism" (Palvia, Midha, Pinjani, 2006). The classification scheme for the methodologies applied (Table 2) was selected and based on the recommendations of Palvia et al., (2006). Following their framework as a guide, a total of fourteen research methodologies are identified within the IS area. Our results demonstrate that the articles utilized many different research methodologies. It must be noted that some papers included more than one type of research methodology, such as interviews and case studies, so the total is greater than the journal total.

Research Methodology	Description
Speculation/commentary	Research that derives from thinly supported arguments or opinions with little or no empirical evidence.
Frameworks and Conceptual Model	Research that intends to develop a framework or a conceptual model.
Library Research	Research that is based mainly on the review of existing literature.
Literature Analysis	Research that critiques, analyzes, and extends existing literature and attempts to build new groundwork, e.g., it includes meta analysis.
Case Study	Study of a single phenomenon (e.g., an application, a technology, a decision) in an organization over a logical time frame.
Survey	Research that uses predefined and structured questionnaires to capture data from individuals. Normally, the questionnaires are mailed (now, fax and electronic means are also used).
Field Study	Study of single or multiple and related processes/ phenomena in single or multiple organizations.
Field Experiment	Research in organizational setting that manipulates and controls the various experimental variables and subjects.
Laboratory Experiment	Research in a simulated laboratory environment that manipulates and controls the various experimental variables and subjects.
Mathematical Model	An analytical (e.g., formulaic, econometric or optimization model) or a descriptive (e.g., simulation) model is developed for the phenomenon under study.
Qualitative Research	Qualitative research methods are designed to help understand people and the social and cultural contexts within which they live. These methods include ethnography, action research, case research, interpretive studies, and examination of documents and texts.
Interview	Research in which information is obtained by asking respondents questions directly. The questions may be loosely defined, and the responses may be open-ended.
Secondary Data	A study that utilizes existing organizational and business data, e.g., financial and accounting reports, archival data, published statistics, etc.
Content Analysis	A method of analysis in which text (notes) are systematically

	examined by identifying and grouping themes and coding, classifying and developing categories
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Table 2: Methodologies in MIS Research (Palvia et al., 2006)

Overall our findings (Table 3) indicate that a wide variety of research methodologies were used across all reviewed articles. In total, survey research appears to have been the dominate research methodology over the 2000-2010 time period with a total of 30 articles using survey. Case study was close behind with a total of 27. Our findings suggest IS researchers to have ample room and opportunities to expand upon the methodologies selected to study IS offshoring. Future research should look to spread out and distance themselves from the popular methodologies followed.

Research Methodology	Frequency
Survey	30
Case Study	27
Secondary Data	6
Frameworks and Conceptual Model	4
Speculation/commentary	4
Field Study	3
Qualitative Research	3
Content Analysis	2
Interview	1
Laboratory Experiment	1
Library Research	2
Mathematical Model	2
Field Experiment	0
Literature Analysis	0

Table 3: IS Offshoring Research Methodologies

Offshoring Topic Area Trends

Over the 2000-2010 time period evaluated, we can see that researchers have studied a wide variety of topics related to IS offshoring. Table 4 presents the topics of interest from the 70 articles on IS offshoring. A total of 24 different subjects were identified. The topic classification for IS offshore topics were guided by a previous study on IS outsourcing topics (Dibbern, Goles, Hirschheim and Jaytilaka, 2004) and by the authors’ reading of the collected articles. The referring to the IS outsourcing review articles provided background and insight in the topic areas addressed by IS sourcing research. Several articles included more than one topic area, such as culture and success, so the total number in following table is greater than the journal total.

The most written about IS offshoring subject was virtual team/distributed team issues followed by culture and risk topics were tied for second place. The topic of offshoring success followed to complete the top four topic areas addressed. It is no surprise that virtual team/distributed team is on the top of the list, as most people would argue that almost all offshore IT projects involve distributed teams due to the increasing availability of competitive resource pools across the world and the continuous advancement of collaboration technologies (Cairncross, 2001; Malhotra and Majchrzak, 2005; Vlaar, van Fenema, and Tiwari, 2008). Culture and risk are other topic areas that should also not come as a surprise to their popularity, since IS offshoring distinguishes itself from traditional outsourcing by introducing an international cultural factor into the relationship.

Research Topic	Frequency
Virtual Team/Distributed Team	10
Culture	7
Risk	7
Success	6
Decision	5
Project Quality/Project Performance	5
Project Management	5
Client-Vendor Relationship	3
Contract	3
Project Control	3
Reason	3
General View	2
Impacts of Offshoring	2
IT Professionals	2
IT Skills	2
Knowledge Management	2
Offshore Portfolio Management	2
Offshoring Trend/ Future	2
Software Development Costs	2
Trust	2
Global Open Sourcing	1
Strategy	1
Perspectives on Offshoring Value	1
Offshoring Stages	1

Table 4: IS Offshoring Topic Area Trends

In order to gauge if topic area trends have changed over the time period studied, the collection of articles were separated into three time periods: 2000-2004, 2005-2007, and 2008-2010. The general trends over these three periods are displayed in Figure 1. The major topics and the frequency of the topic in each period are presented in Table 5, Table 6, and Table 7 respectively. Overall, virtual team remained at the top of the topic trend lists over three periods. With the project development over the time and the maturity of the offshoring projects, topics of success, client-vendor relationship, project quality/project performance, risk, and project control all demonstrating an upward trend over the time period studied.

Research Topic	Frequency
Culture	2
Virtual Team/Distributed Team	2
Contract	1
Decision	1
Project Management	1
Reason	1

Table 5: IS Offshoring Topic Area Trends (2000-2004)

Research Topic	Frequency
Risk	3
Virtual Team/Distributed Team	3
Decision	2
Offshoring Trend/ Future	2
Project Management	2
General View	1
Impacts of Offshoring	1
IT Professionals	1
IT Skills	1
Offshore Portfolio Management	1
Perspectives on Offshoring Value	1

Table 6: IS Offshoring Topic Area Trends (2005-2007)

Research Topic	Frequency
Success	6
Culture	5
Project Quality/Project Performance	5
Client-Vendor Relationship	3
Virtual Team/Distributed Team	5
Risk	4
Project Control	3
Contract	2
Decision	2
Knowledge Management	2
Project Management	2
Reason	2
Software Development Costs	2
General View	1
Global Open Sourcing	1
Impacts of Offshoring	1
IT Professionals	1
IT Skills	1
Offshore Portfolio Management	1
Offshoring Stages	1
Strategy	1
Trust	1

Table 7: IS Offshoring Topic Area Trends (2008-2010)

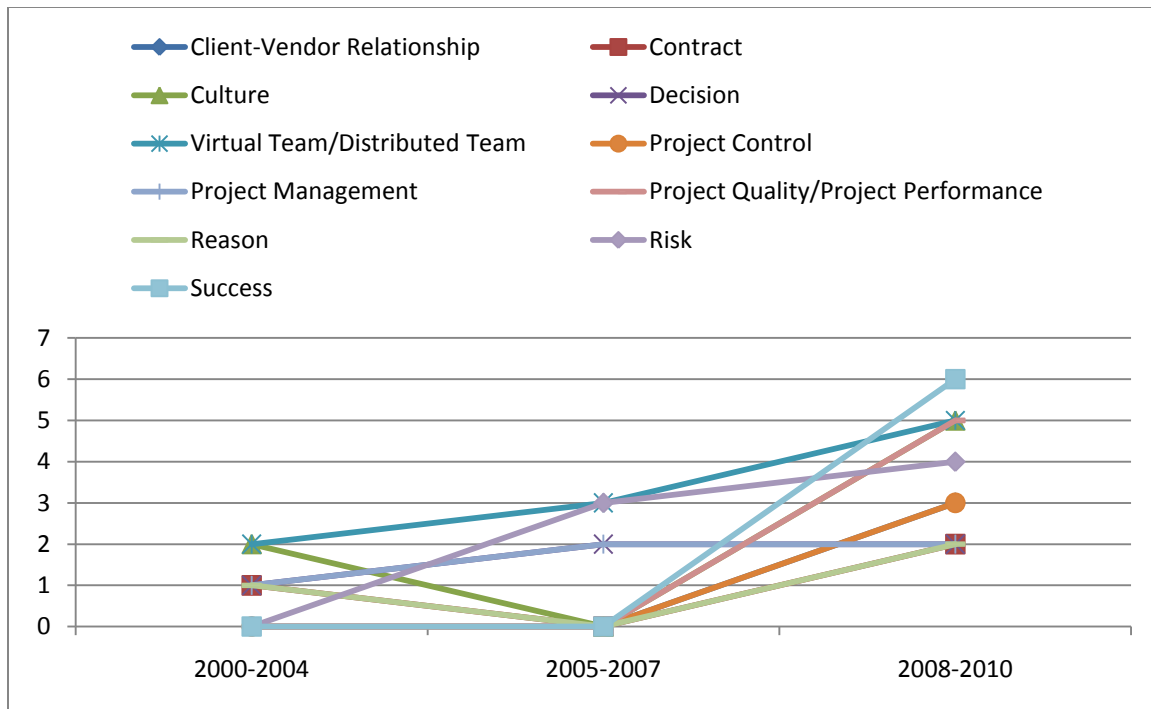


Figure 1: IS Offshoring Topic Area Trends

Client vs. Vendor Focus

Our findings suggest that the client perspective has been given the most attention in studying IS offshoring. In total 42 papers focused on the client’s perspective, whereas research from the vendor perspective only totaled 11 articles. These results were not surprising, since most of the research on sourcing thus far has traditionally adopted a client-centric view and thereby primarily ignoring the vendor’s perspective (Jiang, Yao, and Feng, 2008; Levina and Ross, 2003; Murthy, 2004). Studies that take into account both the client and vendor perspectives have traditionally been comparatively rare (Koh, Ang, and Straub, 2004). In total 14 papers included both the client and vendor perspective in their study of IS offshoring. It is critical that future studies and discussions on IS offshoring recognize that differences exist based on either the client or vendor perspective. Both sides of the IS offshoring story need to be included and examined to fully understand the relationship dynamics. Although these client centered research contributions help us to understand IS offshoring relationships in general, our understanding of the offshoring relationship from both parties remains limited.

Research Focus	Frequency
Client	42
Client and Vendor	14
Vendor	11

Table 8: IS Offshoring Client vs. Vendor Focus

LIMITATIONS

In any research project, choices made by the researchers create limitations in interpreting the results. Any limitation that was encountered was addressed to guard against and minimize its impact. Limitations encountered consisted of the limited sample size of focusing strictly on IS and management journals. Future research may want to conduct a larger assessment including other IS journals, include conference papers and possibly expand the time frame studied. Although attempts were made to ensure that a variety of the leading publications were included, limitations exist in regards to sample size. These limitations notwithstanding, we believe that the study has provided meaningful insights into the state of IS offshoring research. These and other limitations should be kept in mind when considering the findings.

FUTURE RESEARCH DIRECTIONS

Many additional directions for future research present themselves as a result of this analysis. The IS offshoring industry as highlighted is predicted to grow in importance as a source for IS activities. Thus, there is a high need for future research to address the challenges that will continue to be faced by practitioners in migrating to the offshore model. IS offshoring has matured into a multifaceted subject, including areas from outsourcing along with unique areas associated with the global delivery of IS. As our study demonstrates, there is a great deal of diversity in terms of research methodologies, topics studied and perspectives analyzed. A further investigation into our findings revealed a number of areas of emerging research topics and directions for further research.

Our findings revealed how survey and case study are two dominant research methodologies applied to study offshoring. Ample opportunity exists for researchers to expand upon their research methodology usage. Based on our findings there is an evident opportunity for researchers to engage in more longitudinal studies to capture the evolution of the offshoring phenomenon and client-vendor relationship. Longitudinal studies would contribute to our understanding of the maturity of offshoring and how a firms experiences change over time. There is a great opportunity for researchers to move away from the snapshot studies and broaden the overall perspective of IS offshoring developments. IS offshoring has matured over the 2000-2010 time period and researchers need to begin to focus on how the IS offshoring process and client-vendor relationship has evolved with the maturity of the IS offshoring industry. Incorporating a wider selection of research methodologies may uncover unique findings.

Another fertile area for future research is the opportunity to further investigate the client-vendor relationship topic area. Since IS offshoring often entails a management of IS projects across continents and cultures, a strong relationship is often desired and required to ensure offshoring success. Many of the studies uncovered focused on the client perspective, with the vendor perspective often neglected. Future research should focus and include both perspectives to capture the dyadic client-vendor relationship that is often at the core of successful IS offshoring initiatives.

CONCLUSION

IS offshoring of is clearly a phenomenon that will not disappear in the foreseeable future, having evolved from a cost-saving initiative to something of a survival strategy for more and more organizations. The study's reported analysis of IS offshoring research offers some insights into the state of IS offshoring today and opportunities for the future. Based on our findings, a series of

areas for future research was proposed to serve as a guide for future research investigating IS offshoring.

Our study findings have important implications in today's global economy, in which firms increasingly rely on IS offshoring to create added value and to maximize stakeholder benefits. One of our main goals was to provide an early analysis on the current state and future of IS offshoring research using a methodological lens. We hope that this work will fuel further research on IS offshoring that will help fill in the identified gaps and opportunities.

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